

Maryland Hospital Obstetric Services:

Trends and *2007* Utilization Forecast



July 2003



Donald E. Wilson, M.D., MACP
Chairman



Maryland Hospital Obstetrics Services: Trends and 2007 Utilization Forecast



Division of Health Resources

Maryland Hospital Obstetric Services: Trends and 2007 Utilization Forecast

Maryland Health Care Commission

July, 2003

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I. Introduction

Background

This report provides historical and projected utilization data and other information to support the ongoing planning efforts of the Maryland Health Care Commission (MHCC) for inpatient obstetric services provided in acute general hospitals. Obstetric service trends were also described in the Commission's report titled *Maryland Hospital Obstetric Services: Trends and 2006 Utilization Projections*, released in June of 2002 ("the 2002 Report"). The MHCC's State Health Plan for Facilities and Services: Acute Hospital Inpatient Obstetric Services, codified as COMAR 10.24.12, also addresses current issues in hospital obstetric services.

The MHCC defines hospital obstetric services by a series of specific diagnostic related groups (DRGs). Table 1 lists the DRGs that define hospital obstetric services. Approximately 88-90 percent of obstetric service discharges in Maryland are in the DRG categories for normal and Cesarean section deliveries. The other ten percent encompass post- and antepartum diagnoses as listed below.

Table 1. DRGs Defining Maryland Hospital Obstetric Services

DRG Codes	DRG Description
370 & 371	Cesarean section with or without complications
372, 373, 374 & 375	Vaginal delivery with or without complications, or with other procedures
376, 377, 378, 379, 382, 383 & 384	Postpartum diagnoses, ectopic pregnancy, threatened abortion, false labor, other antepartum diagnoses (the 'non-birth DRGs')

Data Sources

Unless otherwise stated, population data used in this report is from the Maryland Department of Planning. Birth data is from the Maryland Department of Planning and the Vital Statistics Administration in the Department of Health and Mental Hygiene; and hospital utilization data is from the Maryland hospital discharge abstract data set collected by the Health Services Cost Review Commission. This report focuses on Maryland's acute care general hospitals.

Organization of the Report

This report describes trends in utilization of hospital obstetric services in Maryland from various perspectives, including the inventory of obstetric services and beds in acute general hospitals, trends and population projections for females 15 to 44 years old in Maryland, trends in actual and projected births from the Maryland Department of Planning, trends in birth rates and

selected birth characteristics such as cesarean section deliveries, rates of prenatal care and low birth weight, based on information from the Vital Statistics Administration and the Centers for Disease Control, and trends in hospital statistics such as discharges, average length of stay, average daily census, charges and payer mix. Section III of the report describes the methodology used to forecast future hospital obstetric discharges and average daily census on a jurisdiction-specific basis to a target year of 2007, and shows the forecast of discharges and average daily census in relation to current levels. Section IV contains detailed statistical tables on which the discussion in Section III is based. A complete description of the utilization forecast methodology is provided in the Appendix.

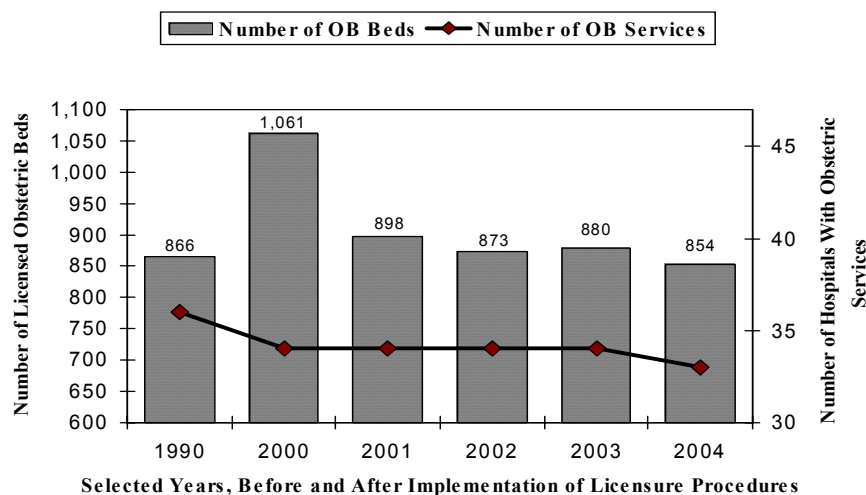
II. Overview: Trends in Maryland Hospital Obstetric Service Utilization

Inventory of Acute Hospital Obstetric Services

Currently, 33 of Maryland's 47 acute general hospitals have an obstetric service. Table 2 lists all acute general hospitals in Maryland, the number of licensed obstetric beds by hospital in fiscal year 2003, and shows which hospitals do not have obstetric services. This table also shows which hospitals are part of a multi-hospital system. Since the 2002 Report, Union Memorial Hospital in Baltimore has closed its obstetric and newborn services.

Figure 1 shows the trend in the number of obstetric beds and obstetric services in Maryland. The number of licensed obstetric beds in Maryland has remained fairly stable over the last four years, even though the average daily census has been increasing slightly, as shown in Table 13 of this report.

Figure 1. Trends in Acute Care Hospital Obstetric Services Inventory: Maryland, 1990 – 2004



Source: Maryland Health Care Commission

Note: 2001 – 2004 are fiscal years

Table 2. Obstetric Services Inventory and System Affiliation: Maryland, July 1, 2003

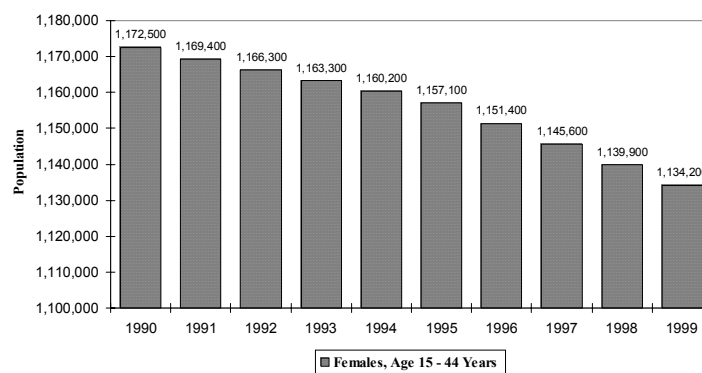
Jurisdictions	Hospital Name	Licensed OB Beds	Current Local Hospital-System Affiliation
Allegany	Memorial of Cumberland Hospital	10	Western Md Hlth System
	Sacred Heart Hospital	0	Western Md Hlth System
Frederick	Frederick Memorial Hospital	23	
Garrett	Garrett County Memorial Hospital	4	
Washington	Washington County Hospital	14	
WESTERN MARYLAND TOTAL		51	
Montgomery	Holy Cross Hospital	85	
	Montgomery General Hospital	16	
	Shady Grove Adventist Hospital	59	Adventist Hlth Care
	Suburban Hospital	0	
	Washington Adventist Hospital	28	Adventist Hlth Care
MONTGOMERY COUNTY TOTAL		188	
Calvert	Calvert Memorial Hospital	10	
Charles	Civista Medical Center	15	
Prince George's	Doctors Community Hospital	0	
	Laurel Regional Medical Center	13	Dimensions Hlth System
	Fort Washington	0	
	Prince George's Hospital Center	40	Dimensions Hlth System
	Southern Maryland Hospital Center	30	
St. Mary's	St. Mary's Hospital	12	
SOUTHERN MARYLAND TOTAL		120	
Anne Arundel	Anne Arundel Medical Center	46	
	North Arundel Hospital	0	Univ of Md Med System
Baltimore City	Bon Secours Hospital	0	Bon Secours Health System
	Good Samaritan Hospital	0	MedStar Health
	Harbor Hospital	25	MedStar Health
	Johns Hopkins Bayview M. C.	14	Johns Hopkins Hlth System
	Johns Hopkins Hospital	35	Johns Hopkins Hlth System
	James Lawrence Kernan Hospital	0	Univ of Md Med System
	Maryland General Hospital	20	Univ of Md Med System
	Mercy Medical Center	27	
	Sinai Hospital of Baltimore	26	LifeBridge Health
	St. Agnes Hospital	30	
	Union Memorial Hospital	0	MedStar Health
	University of Maryland Medical Center	34	Univ of Md Med System
Baltimore Co.	Franklin Square Hospital	37	MedStar Health
	Greater Baltimore Medical Center	60	
	Northwest Hospital	0	
	St. Joseph Hospital	28	
Carroll	Carroll Co. General Hospital	20	
Harford	Upper Chesapeake Medical Center	9	Upper Chesapeake Hlth Sys
	Harford Memorial Hospital	0	Upper Chesapeake Hlth Sys
Howard	Howard County General Hospital	32	Johns Hopkins Hlth System
CENTRAL MARYLAND TOTAL		443	
Cecil	Union Hospital of Cecil	6	
Dorchester	Dorchester General Hospital	0	Shore Health System
Kent	Kent & Queen Anne's Hospital	4	
Somerset	Edward W. McCready Hospital	0	
Talbot	Memorial Hospital at Easton	18	Shore Health System
Wicomico	Peninsula Regional Medical Center	24	
Worcester	Atlantic General Hospital	0	
EASTERN SHORE TOTAL		52	
MD TOTAL	33 Obstetric Programs	854	15 Obstetric Programs

Source: Maryland Health Care Commission

Population Estimates and Projections: Females of Child-Bearing Age

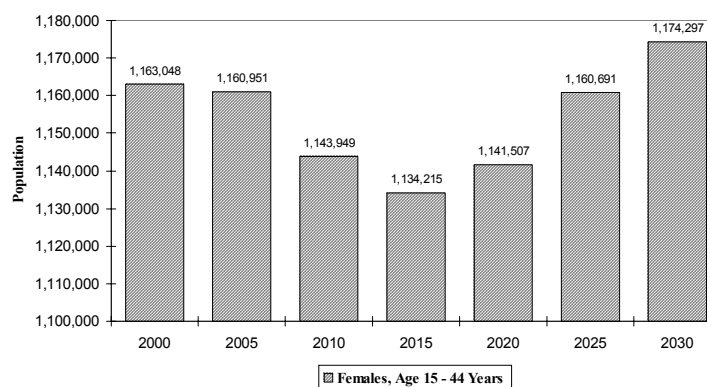
The 15 to 44 year old female age group is the population category generally associated with obstetric services, and is the basis for the calculations of general fertility rates. This population group has been declining in numbers and is projected to continue to decline for the next decade. Figures 2a and 2b show the declining population in the 15-44 year old female category historically in the 1990s using the 1990 Census (Figure 2a), and from 2000 through 2030 based on Table 3, below (Figure 2b).

Figure 2a. Trend in Historical Population of Women of Child Bearing Age: Maryland, 1990 – 1999



Source: Maryland Department of Planning; 1990 Census

Figure 2b. Trend in Population Estimates of Women of Child Bearing Age: Maryland, 2000 – 2030



Source: Maryland Department of Planning; 2002 Household Population Projections (9/30/02)

**Table 3a. Population Estimates and Projections for Females, 15-44 Years of Age,
by Jurisdiction of Residence: Maryland, 2000 - 2030**

Jurisdiction	2000	2005	2010	2015	2020	2025	2030
Allegany County	13,590	13,017	12,411	12,097	11,898	11,366	10,954
Anne Arundel County	105,685	106,828	102,877	99,526	96,956	96,911	97,184
Baltimore City	146,127	141,598	138,331	135,643	135,030	134,602	134,572
Baltimore County	160,839	156,341	153,066	150,859	150,301	152,455	154,480
Calvert County	16,420	16,432	16,185	15,838	16,386	17,454	18,532
Caroline County	6,129	6,043	5,966	5,838	5,950	6,116	6,169
Carroll County	31,150	33,061	32,006	30,225	28,405	27,648	27,112
Cecil County	18,682	18,835	18,844	18,807	18,958	19,594	20,098
Charles County	28,149	29,942	30,766	32,609	35,963	39,190	40,406
Dorchester County	5,923	5,596	5,361	5,150	5,094	5,154	5,166
Frederick County	42,708	45,111	46,699	48,845	52,831	57,238	62,389
Garrett County	5,904	5,695	5,459	5,398	5,264	5,351	5,300
Harford County	47,508	46,317	44,628	43,693	43,822	44,188	44,487
Howard County	56,532	59,256	59,903	59,919	60,436	59,259	58,238
Kent County	3,338	3,202	3,020	2,906	2,903	2,873	2,871
Montgomery County	193,286	192,009	192,382	194,860	198,823	203,022	201,701
Prince George's County	191,921	193,252	189,289	185,120	183,387	186,264	190,925
Queen Anne's County	8,080	8,301	8,222	8,575	9,018	9,493	9,656
Somerset County	4,014	3,699	3,511	3,501	3,557	3,400	3,327
St. Mary's County	18,812	19,161	19,126	19,194	20,360	21,774	22,734
Talbot County	5,907	5,662	5,386	5,240	5,298	5,528	5,604
Washington County	25,728	25,217	24,414	24,127	23,885	24,383	24,455
Wicomico County	18,238	18,172	18,164	18,509	19,131	19,309	19,600
Worcester County	8,378	8,204	7,933	7,736	7,851	8,119	8,337
STATE TOTAL	1,163,048	1,160,951	1,143,949	1,134,215	1,141,507	1,160,691	1,174,297

**Table 3b. Population Estimates and Projections for Females, 15-44 Years of Age, by Region
and Selected Jurisdiction: Maryland, Selected Years, 2000 - 2030**

Region/ Selected Jurisdiction	2000	2005	2010	2015	2020	2025	2030
Western Maryland	87,930	89,040	88,983	90,467	93,878	98,338	103,098
Montgomery County	193,286	192,009	192,382	194,860	198,823	203,022	201,701
Southern Maryland	255,302	258,787	255,366	252,761	256,096	264,682	272,597
Central Maryland	547,841	543,401	530,811	519,865	514,950	515,063	516,073
Eastern Shore	78,689	77,714	76,407	76,262	77,760	79,586	80,828
State Total	1,163,048	1,160,951	1,143,949	1,134,215	1,141,507	1,160,691	1,174,297
Baltimore City	146,127	141,598	138,331	135,643	135,030	134,602	134,572
Baltimore County	160,839	156,341	153,066	150,859	150,301	152,455	154,480
Montgomery County	193,286	192,009	192,382	194,860	198,823	203,022	201,701
Prince George's County	191,921	193,252	189,289	185,120	183,387	186,264	190,925

Note: Western Maryland: Allegany, Frederick, Garrett and Washington counties. Southern Maryland: Calvert, Charles, Prince George's and St. Mary counties. Central Maryland: Anne Arundel, Carroll, Baltimore, Carroll, Harford and Howard counties and Baltimore City.

Source: Maryland Department of Planning, 2002 Household Population Projections (2/14/03), prepared by the Maryland Health Care Commission

**Table 4a. Percent Change in Female Population, 15-44 Years of Age,
by Jurisdiction of Residence: Maryland, 2000 - 2030**

Jurisdiction	2000 - 2005	2005 - 2010	2010 - 2015	2015 - 2020	2020 - 2025	2025 - 2030
Allegany County	-4.2%	-4.7%	-2.5%	-1.6%	-4.5%	-3.6%
Anne Arundel County	1.1%	-3.7%	-3.3%	-2.6%	0.0%	0.3%
Baltimore City	-3.1%	-2.3%	-1.9%	-0.5%	-0.3%	0.0%
Baltimore County	-2.8%	-2.1%	-1.4%	-0.4%	1.4%	1.3%
Calvert County	0.1%	-1.5%	-2.1%	3.5%	6.5%	6.2%
Caroline County	-1.4%	-1.3%	-2.1%	1.9%	2.8%	0.9%
Carroll County	6.1%	-3.2%	-5.6%	-6.0%	-2.7%	-1.9%
Cecil County	0.8%	0.0%	-0.2%	0.8%	3.4%	2.6%
Charles County	6.4%	2.8%	6.0%	10.3%	9.0%	3.1%
Dorchester County	-5.5%	-4.2%	-3.9%	-1.1%	1.2%	0.2%
Frederick County	5.6%	3.5%	4.6%	8.2%	8.3%	9.0%
Garrett County	-3.5%	-4.1%	-1.1%	-2.5%	1.7%	-1.0%
Harford County	-2.5%	-3.6%	-2.1%	0.3%	0.8%	0.7%
Howard County	4.8%	1.1%	0.0%	0.9%	-1.9%	-1.7%
Kent County	-4.1%	-5.7%	-3.8%	-0.1%	-1.0%	-0.1%
Montgomery County	-0.7%	0.2%	1.3%	2.0%	2.1%	-0.7%
Prince George's County	0.7%	-2.1%	-2.2%	-0.9%	1.6%	2.5%
Queen Anne's County	2.7%	-1.0%	4.3%	5.2%	5.3%	1.7%
Somerset County	-7.8%	-5.1%	-0.3%	1.6%	-4.4%	-2.1%
St. Mary's County	1.9%	-0.2%	0.4%	6.1%	6.9%	4.4%
Talbot County	-4.1%	-4.9%	-2.7%	1.1%	4.3%	1.4%
Washington County	-2.0%	-3.2%	-1.2%	-1.0%	2.1%	0.3%
Wicomico County	-0.4%	0.0%	1.9%	3.4%	0.9%	1.5%
Worcester County	-2.1%	-3.3%	-2.5%	1.5%	3.4%	2.7%
State Total	-0.2%	-1.5%	-0.9%	0.6%	1.7%	1.2%

**Table 4b. Percent Change in Female Population, 15-44 Years of Age,
by Region and Selected Jurisdiction: Maryland, 2000 - 2030**

Region/ Selected Jurisdiction	2000 - 2005	2005 - 2010	2010 - 2015	2015 - 2020	2020 - 2025	2025 - 2030
Western Maryland	1.3%	-0.1%	1.7%	3.8%	4.8%	4.8%
Montgomery County	-0.7%	0.2%	1.3%	2.0%	2.1%	-0.7%
Southern Maryland	1.4%	-1.3%	-1.0%	1.3%	3.4%	3.0%
Central Maryland	-0.8%	-2.3%	-2.1%	-0.9%	0.0%	0.2%
Eastern Shore	-1.2%	-1.7%	-0.2%	2.0%	2.3%	1.6%
State Total	-0.2%	-1.5%	-0.9%	0.6%	1.7%	1.2%
Baltimore City	-3.1%	-2.3%	-1.9%	-0.5%	-0.3%	0.0%
Baltimore County	-2.8%	-2.1%	-1.4%	-0.4%	1.4%	1.3%
Montgomery County	-0.7%	0.2%	1.3%	2.0%	2.1%	-0.7%
Prince George's County	0.7%	-2.1%	-2.2%	-0.9%	1.6%	2.5%

Note: Western Maryland includes Allegany, Garrett, Frederick and Washington counties. Southern Maryland includes Charles Calvert, St. Mary's and Prince George's counties. Central Maryland includes Anne Arundel, Carroll, Baltimore, Harford and Howard counties and Baltimore City.

Source: Maryland Department of Planning, 2002 Household Population Projections (2/14/03), prepared by the Maryland Health Care Commission.

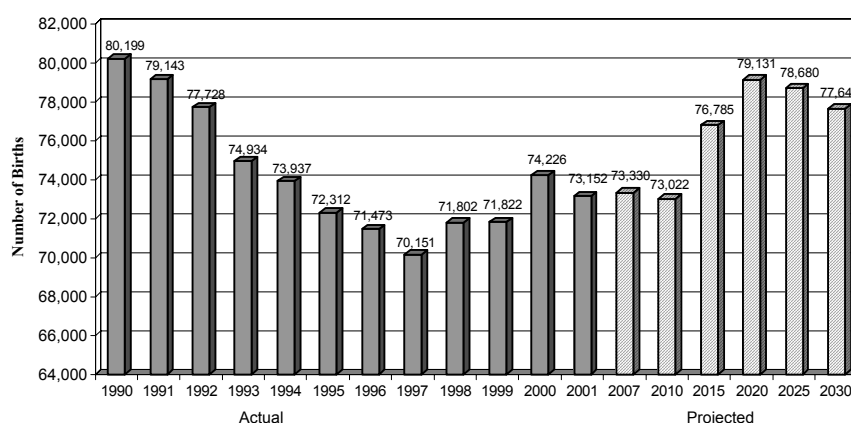
Overall, this population group will decline by 2.2% between 2000 and 2010, and increase by 0.7% between 2010 and 2020. By comparison, the total state population increased over ten percent from 1990 to 2000, and is projected to increase by eight percent from 2000 to 2010, and 6 percent between 2010 and 2020.

Population trends in the 15 to 44 year old female age group are presented in Table 3 by county and by selected jurisdictions, in five year increments from 2000 to 2030.¹ The percent change between the five year increments is shown in Table 4. Most of the projected decline is expected to occur in Central Maryland, offset by projected increases in Charles, Frederick and, to a smaller extent, Carroll counties.

Birth Trends and Projections

Figure 3 illustrates the declining trends in actual and projected births to Maryland residents. The number of births to Maryland residents has generally been declining through the 1990s. Table 5 shows trends in births, by jurisdiction of residence, between 1990 and 2001, the last year for which data is available from the Vital Statistics Administration. The number of births to Maryland residents is notably less than in 1990, declining from about 80,200 in 1990 to about 70,100 in 1997, increasing in 1998 and 2000, and declining again in 2001. This is an 8.8% decline in the number of births over the last ten years. Births to Baltimore City residents have declined by over 36 percent, accounting for the largest decline. Births to Frederick and Howard county residents showed notable increases over the same ten year period.

**Figure 3. Trend in Actual and Projected Resident Births:
Maryland, 1990 - 2030**



Source: Maryland Department of Planning

¹ This report uses Maryland's household population, excluding group quarters (institutionalized) population.

The Maryland Health Care Commission relies on the birth projections developed by the Maryland Department of Planning (MDP).² MDP's projections have been revised since the 2002 Report, reflecting projections slightly higher than last year's projections. Generally, the number of births to Maryland residents is not projected to increase above the current (2001) level in this decade. Table 6 shows annual and 5-year birth projections for 2002 through 2030 from the MDP.

Table 5a. Trends in Maryland Births by Jurisdiction of Residence: Maryland, 1990 - 2001

Jurisdiction	Actual Births											
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Allegany County	904	893	887	869	793	776	784	761	753	728	794	708
Anne Arundel County	6,778	6,612	6,746	6,203	6,531	6,598	6,419	6,465	6,602	6,660	6,790	6,893
Baltimore City	14,354	13,815	12,983	12,264	11,192	9,997	9,751	9,262	9,624	9,734	9,641	9,100
Baltimore County	10,213	10,009	9,658	9,261	9,164	9,417	9,124	8,899	9,080	9,003	9,396	9,056
Calvert County	862	852	877	901	858	900	917	914	939	956	1,024	955
Caroline County	424	425	415	366	386	358	382	363	336	363	407	389
Carroll County	1,968	1,963	1,833	1,787	1,857	1,812	1,913	1,827	1,922	1,828	1,897	1,884
Cecil County	1,184	1,187	1,194	1,097	1,068	1,101	1,073	1,090	1,092	1,168	1,138	1,178
Charles County	1,739	1,739	1,638	1,638	1,674	1,597	1,649	1,636	1,689	1,675	1,746	1,747
Dorchester County	477	414	422	363	345	301	315	389	298	314	328	336
Frederick County	2,559	2,463	2,577	2,536	2,665	2,648	2,660	2,626	2,730	2,595	2,906	2,897
Garrett County	430	417	394	416	389	361	366	349	358	355	333	328
Harford County	2,958	2,965	2,957	2,911	3,011	2,950	2,963	2,855	3,082	2,925	2,954	2,895
Howard County	3,119	3,233	3,251	3,359	3,411	3,487	3,433	3,358	3,362	3,372	3,563	3,602
Kent County	233	264	221	200	224	189	187	202	181	211	203	155
Montgomery County	12,773	12,466	12,434	12,194	12,117	12,185	11,848	11,813	12,251	12,369	13,055	13,146
Prince George's County	13,401	13,566	13,434	13,058	12,755	12,350	12,348	11,972	12,138	11,900	12,423	12,269
Queen Anne's County	488	442	475	434	418	421	470	429	477	477	500	470
Somerset County	272	267	279	257	285	263	240	249	248	253	273	244
St. Mary's County	1,352	1,320	1,372	1,241	1,280	1,231	1,164	1,207	1,218	1,303	1,215	1,266
Talbot County	415	382	373	364	357	378	345	320	322	332	369	355
Washington County	1,660	1,737	1,630	1,564	1,538	1,525	1,559	1,589	1,577	1,646	1,601	1,622
Wicomico County	1,162	1,175	1,174	1,155	1,128	1,021	1,084	1,095	1,037	1,126	1,174	1,136
Worcester County	474	537	504	496	491	446	479	481	486	529	496	521
TOTALS	80,199	79,143	77,728	74,934	73,937	72,312	71,473	70,151	71,802	71,822	74,226	73,152

Table 5b. Trends in Maryland Resident Births by Region and Selected Jurisdiction: Maryland, 1990 - 2001

Region/ Selected Jurisdiction	Actual Births											
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Western Maryland	5,553	5,510	5,488	5,385	5,385	5,310	5,369	5,325	5,418	5,324	5,634	5,555
Montgomery County	12,773	12,466	12,434	12,194	12,117	12,185	11,848	11,813	12,251	12,369	13,055	13,146
Southern Maryland	17,354	17,477	17,321	16,838	16,567	16,078	16,078	15,729	15,984	15,834	16,408	16,237
Central Maryland	39,390	38,597	37,428	35,785	35,166	34,261	33,603	32,666	33,672	33,522	34,241	33,430
Eastern Shore	5,129	5,093	5,057	4,732	4,702	4,478	4,575	4,618	4,477	4,773	4,888	4,784
State Total	80,199	79,143	77,728	74,934	73,937	72,312	71,473	70,151	71,802	71,822	74,226	73,152
Baltimore City	14,354	13,815	12,983	12,264	11,192	9,997	9,751	9,262	9,624	9,734	9,641	9,100
Baltimore County	10,213	10,009	9,658	9,261	9,164	9,417	9,124	8,899	9,080	9,003	9,396	9,056
Montgomery County	12,773	12,466	12,434	12,194	12,117	12,185	11,848	11,813	12,251	12,369	13,055	13,146
Prince George's County	13,401	13,566	13,434	13,058	12,755	12,350	12,348	11,972	12,138	11,900	12,423	12,269

Note: Western Maryland includes Allegany, Garrett, Frederick and Washington counties. Southern Maryland includes Charles, Calvert, St. Mary's and Prince George's counties. Central Maryland includes Anne Arundel, Carroll, Baltimore, Harford and Howard counties and Baltimore City.

Source: Maryland Department of Planning

² The MDP's annual birth projections are produced for their public school projection report. Their annual projections are based on their 5-year birth data from their population cohort model. This model applies age and race specific fertility rates and population estimates to derive a total number of births for five year increments. The model's fertility rates are derived from historical fertility rates and adjusted as deemed necessary.

Table 6 shows that births are expected to increase very slightly by about a half of a percent between 2002 and 2007, rise gradually through 2020, and decline again thereafter. The short term decline is projected most significantly in Anne Arundel and Montgomery counties, with some increases in Baltimore City, Charles and Harford counties. The longer term increases are most significant for Frederick, Charles, Carroll and St. Mary's counties. Baltimore City and Anne Arundel County will continue to experience declining births.

Table 6a. Trends in Projected Resident Births, by Jurisdiction of Residence: Maryland, 2002 - 2030

Jurisdiction							Long Range Projection Estimates				
	2002	2003	2004	2005	2006	2007	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030
Allegany County	675	700	700	700	700	700	730	719	681	654	641
Anne Arundel County	6,650	6,500	6,350	6,300	6,400	6,550	6,478	6,744	6,824	6,601	6,249
Baltimore City	9,150	9,200	9,200	9,300	9,300	9,300	9,317	9,310	9,078	8,992	9,018
Baltimore County	8,800	8,800	8,950	9,000	9,100	9,150	9,183	9,636	9,724	9,469	9,283
Calvert County	1,050	1,025	1,025	1,025	1,025	1,025	1,003	1,138	1,195	1,193	1,191
Caroline County	400	390	390	390	410	410	402	411	399	392	398
Carroll County	1,950	1,990	1,990	1,990	1,990	1,990	1,927	2,143	2,297	2,281	2,202
Cecil County	1,175	1,175	1,175	1,200	1,225	1,225	1,216	1,283	1,304	1,297	1,302
Charles County	1,675	1,700	1,700	1,750	1,825	1,900	1,974	2,258	2,436	2,487	2,534
Dorchester County	310	320	320	330	340	340	364	359	338	330	333
Frederick County	3,025	2,925	2,950	2,975	3,050	3,050	3,006	3,518	3,876	4,056	4,241
Garrett County	290	310	320	320	320	320	347	346	338	328	327
Harford County	2,775	2,750	2,750	2,800	2,900	2,900	2,880	3,101	3,180	3,080	2,954
Howard County	3,450	3,400	3,400	3,450	3,450	3,450	3,228	3,632	3,976	3,928	3,681
Kent County	160	175	175	175	185	185	192	195	184	169	165
Montgomery County	13,050	12,750	12,700	12,600	12,600	12,600	12,568	12,963	13,893	14,042	13,699
Prince George's County	12,650	12,275	12,250	12,250	12,350	12,450	12,408	12,971	13,278	13,261	13,230
Queen Anne's County	515	500	500	490	510	520	508	565	597	600	598
Somerset County	235	235	235	230	230	230	235	227	223	218	214
St. Mary's County	1,375	1,350	1,375	1,375	1,400	1,400	1,386	1,488	1,519	1,549	1,614
Talbot County	315	315	315	315	325	325	330	347	351	343	336
Washington County	1,600	1,575	1,575	1,600	1,600	1,625	1,617	1,661	1,666	1,633	1,625
Wicomico County	1,150	1,160	1,160	1,180	1,190	1,190	1,205	1,231	1,232	1,237	1,264
Worcester County	450	475	475	475	485	495	518	540	543	538	541
TOTALS	72,875	71,995	71,980	72,220	72,910	73,330	73,022	76,785	79,131	78,680	77,640

Table 6b. Trends in Projected Maryland Births by Region and Selected Jurisdiction: Maryland 2002 - 2030

Region/ Selected Jurisdiction							Long Range Projection Estimates				
	2002	2003	2004	2005	2006	2007	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030
Western Maryland	5,590	5,510	5,545	5,595	5,670	5,695	5,701	6,243	6,561	6,672	6,833
Montgomery County	13,050	12,750	12,700	12,600	12,600	12,600	12,568	12,963	13,893	14,042	13,699
Southern Maryland	16,750	16,350	16,350	16,400	16,600	16,775	16,771	17,855	18,428	18,489	18,570
Central Maryland	32,775	32,640	32,640	32,840	33,140	33,340	33,013	34,566	35,078	34,352	33,387
Eastern Shore	4,710	4,745	4,745	4,785	4,900	4,920	4,969	5,158	5,172	5,125	5,151
State Total	72,875	71,995	71,980	72,220	72,910	73,330	73,022	76,785	79,131	78,680	77,640
Baltimore City	9,150	9,200	9,200	9,300	9,300	9,300	9,317	9,310	9,078	8,992	9,018
Baltimore County	8,800	8,800	8,950	9,000	9,100	9,150	9,183	9,636	9,724	9,469	9,283
Montgomery County	13,050	12,750	12,700	12,600	12,600	12,600	12,568	12,963	13,893	14,042	13,699
Prince George's County	12,650	12,275	12,250	12,250	12,350	12,450	12,408	12,971	13,278	13,261	13,230

Note: Western Maryland includes Allegany, Garrett, Frederick and Washington counties. Southern Maryland includes Charles, Calvert, St. Mary's and Prince George's counties.

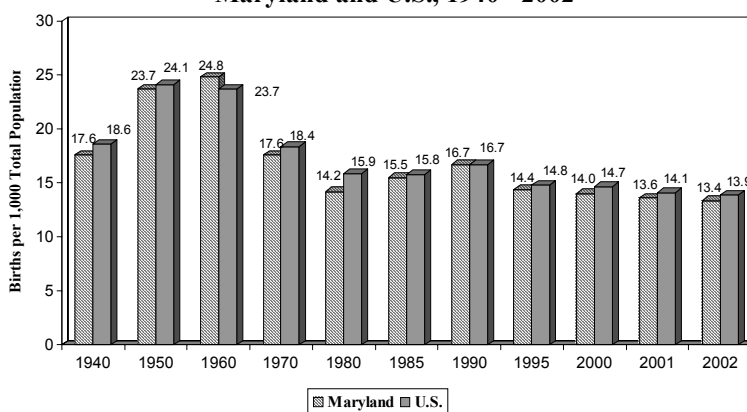
Central Maryland includes Anne Arundel, Carroll, Baltimore, Harford and Howard counties and Baltimore City

Source: Maryland Department of Planning

Selected Birth Characteristics

Birth Rates

**Figure 4. Birth Rate Trends:
Maryland and U.S., 1940 - 2002**



Source: Maryland Vital Statistics, Annual Reports; National Center for Health Statistics, National Vital Statistics Reports

The crude birth rate, which measures births against the total population, has fluctuated over time in Maryland and nationally, as shown in Figure 4. Birth rates declined through the 1990s from a high of 16.7 births per 1,000 total population in 1990 to under 14 by 1999. After remaining at about 14 births per 1,000 through 2001, Maryland's birth rate dropped in 2002 to 13.4. The national birth rate dropped in 2002 to 13.9, the lowest U.S. birth rate reported since the availability of national data.

Fertility Rates

The fertility rate uses the female 15 to 44 year old population rather than total population as the denominator. Like Maryland's birth rates, Maryland's fertility rate is historically below the national average, and has declined through the 1990s. Based on preliminary data from the National Center for Health Statistics, Maryland's fertility rate dropped to 61.0 in 2001 and to 60.5 in 2002. Maryland fertility rates vary by jurisdiction, which is shown in Table 7 through 1999, the latest year for which jurisdiction-specific rates are available from Maryland Vital Statistics. The national fertility rate also reflects the trend of decline through the 1990s, dropping to 64.8 in 2002. Table 8 shows a general comparison of the trend in the Maryland fertility rate with the U.S. fertility rate from 1990 to 2001.

Table 7a. Trend in Fertility Rates by Jurisdiction of Residence: Maryland, 1990-1999

Jurisdiction	1990	1995	1996	1997	1998	1999
Allegany County	56.9	53.6	55.8	54.0	54.1	53.1
Anne Arundel County	64.7	61.1	60.0	60.1	61.5	62.2
Baltimore City	78.5	61.0	61.6	60.0	63.0	66.0
Baltimore County	61.3	58.7	57.7	56.3	56.8	56.9
Calvert County	67.7	58.9	59.1	56.8	57.0	57.4
Caroline County	70.4	57.0	60.8	55.7	54.6	59.5
Carroll County	65.8	55.7	58.0	54.4	57.4	54.4
Cecil County	69.7	62.2	60.3	60.8	60.2	63.7
Charles County	66.8	57.6	59.3	58.4	60.6	59.5
Dorchester County	72.9	48.6	51.3	63.6	50.2	53.0
Frederick County	67.5	62.8	62.3	60.3	62.0	58.3
Garrett County	69.1	57.9	59.5	56.2	60.9	61.1
Harford County	66.1	61.9	61.0	57.9	63.5	60.3
Howard County	61.8	62.5	61.1	58.9	57.6	56.8
Kent County	59.6	49.0	48.4	51.7	46.9	54.8
Montgomery County	65.6	62.3	60.8	59.9	61.3	61.7
Prince George's County	65.9	60.4	60.7	59.3	59.6	58.7
Queen Anne's County	64.0	52.4	57.2	50.6	58.0	57.1
St. Mary's County	71.7	64.4	59.4	58.7	60.4	64.4
Somerset County	57.5	55.5	53.1	54.2	52.9	54.2
Talbot County	66.6	60.5	56.1	49.7	51.6	53.3
Washington County	63.4	59.7	62.2	62.9	62.8	66.3
Wicomico County	64.2	55.9	60.2	60.9	57.6	63.2
Worcester County	64.0	56.6	59.3	58.0	59.1	64.0
STATE OF MARYLAND	66.9	60.4	60.1	58.8	60.0	60.3
United States	70.9	65.6	65.3	65.0	65.6	65.9

Table 7b. Trend in Fertility Rates by Region and Selected Jurisdiction: Maryland, 1990 - 1999

Region/ Selected Jurisdiction	1990	1995	1996	1997	1998	1999
Baltimore Metro Area	68.0	60.3	59.9	58.3	60.1	60.5
National Capital Area	65.8	61.3	60.7	59.6	60.4	60.2
Northwest Area	64.4	60.0	61.1	59.8	60.9	59.9
Southern Area	68.6	60.0	59.3	58.1	59.6	60.5
Eastern Shore Area	66.1	56.5	57.9	57.5	56.3	60.0
TOTAL	66.9	60.4	60.1	58.8	60.0	60.3
Baltimore City	78.5	61.0	61.6	60.0	63.0	66.0
Baltimore County	61.3	58.7	57.7	56.3	56.8	56.9
Montgomery County	65.6	62.3	60.8	59.9	61.3	61.7
Prince George's County	65.9	60.4	60.7	59.3	59.6	58.7

Note: Regions are those used by Vital Statistics. The Northwest area includes Garrett, Allegany, Washington and Frederick counties. The Baltimore Metro Area includes Baltimore City and Baltimore, Anne Arundel, Harford, Howard, and Carroll counties. The Southern area includes Calvert, Charles and St. Mary's counties. The National Capital Area includes Montgomery and Prince George's counties. The Eastern Shore Area includes the remaining nine counties.

Source: Maryland Vital Statistics, Annual Reports; National Center for Health Statistics, National Vital Statistics Reports.

Table 8. Comparison of Maryland and U.S. Fertility Rates, Selected Years

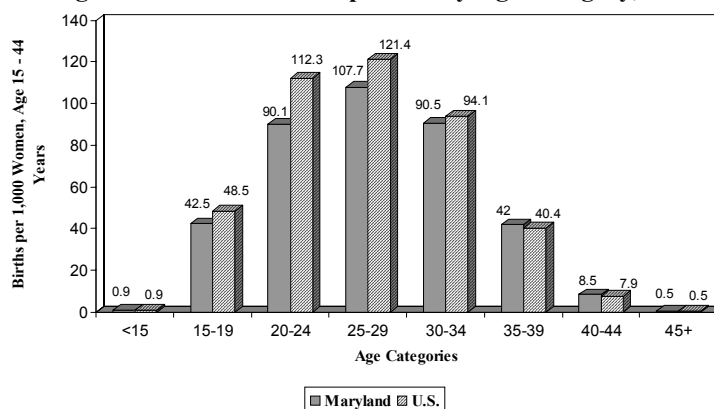
	1990	1995	2000	2001
Maryland Births	80,200	72,300	74,200	73,150
Maryland Fertility Rate	66.9	60.4	61.9	61.0
U.S. Fertility Rate	70.9	65.6	67.5	65.3

Sources: Maryland Hospital Discharge Abstract; Maryland Vital Statistics, Annual Reports;
National Center for Health Statistics, National Vital Statistics Reports

Birth Rates by Age of Mother

Age specific birth rates provide a more detailed picture of birth trends. Figure 5 shows birth rates by age category for Maryland and for the U.S. Nationally, women in their 20s, and generally women between 25 and 29 years of age, have the highest birth rates, and birth rates decline sharply in the early 30s. In Maryland, however, the birth rate for women in their early 30s is about the same as for women in their early 20s.

Figure 5. Birth Rate Comparison by Age Category, 2000



Source: Maryland Vital Statistics, Annual Reports; National Center for Health Statistics, National Vital Statistics Reports
Note: Rates based on population in that age group; the <15 category uses the 10-15 population, and the 45+ category uses the 45-49 population

The trend in declining birth rates in the 1990s is seen primarily in the younger age categories. Birth rates among teenagers continue to show a downward trend, while birth rates among women in their 30s and 40s are still increasing. This is shown in Table 9 (a) – (h). The rate of births to Maryland teenagers declined 21.8% since 1990, from 53.2 in 1990 to 41.6 in 2000, the latest year for which data is available. Trends in the rate of births to teenagers age 15 to 19 also declined nationally, to a record low rate of 42.9 births per 1,000 women in 2002 – a 28% decrease since 1991.³

³ Hamilton, BE, et. al. Births: Preliminary data for 2002. National Vital Statistics Reports; Vol. 51 No. 11. Hyattsville, Maryland: National Center for Health Statistics. 2003.

**Table 9a. Trends in Maryland Birth Rates by Region and
Selected Jurisdiction of Residence, Age Less Than 15: 1990 - 1999**

Region/ Selected Jurisdiction	1990	1995	1996	1997	1998	1999
Baltimore Metro Area	2.2	1.8	1.8	1.5	1.6	1.2
National Capital Area	1.3	1.0	0.7	0.8	0.7	0.7
Northwest Area	0.6	0.6	0.6	1.0	0.6	0.3
Southern Area	0.7	0.8	0.5	0.8	0.7	0.5
Eastern Shore Area	2.1	1.3	1.4	1.2	0.9	1.2
Total	1.7	1.3	1.2	1.2	1.1	0.9
Baltimore City	5.6	5.0	4.9	4.2	4.6	3.5
Baltimore County	0.8	0.7	0.6	0.5	0.7	0.6
Montgomery County	0.7	0.3	0.4	0.5	0.4	0.3
Prince George's County	1.9	1.8	1.0	1.1	1.0	1.1

**Table 9b. Trends in Maryland Birth Rates by Region and
Selected Jurisdiction of Residence, Age 15-19: 1990 - 1999**

Region/ Selected Jurisdiction	1990	1995	1996	1997	1998	1999
National Capital Area	40.6	38.3	38.0	34.5	35.2	33.6
Northwest Area	43.6	44.2	41.6	42.2	38.6	38.8
Southern Area	52.8	42.9	42.7	42.9	36.8	36.9
Eastern Shore Area	61.8	54.2	56.6	53.3	47.7	49.2
Total	53.2	47.7	46.0	43.9	43.0	42.5
Baltimore City	117.9	99.5	98.9	94.5	90.4	95.6
Baltimore County	34.1	36.5	32.8	33.0	36.3	35.2
Montgomery County	25.4	24.7	22.6	21.7	23.5	22.4
Prince George's County	52.9	50.1	51.3	45.6	45.0	43.1

**Table 9c. Trends in Maryland Birth Rates by Region and
Selected Jurisdiction of Residence, Age 20-24: 1990 - 1999**

Region/ Selected Jurisdiction	1990	1995	1996	1997	1998	1999
National Capital Area	78.2	73.8	75.5	75.6	76.2	76.3
Northwest Area	108.6	101.5	102.4	97.0	97.3	96.6
Southern Area	125.9	104.2	100.1	93.1	98.6	97.2
Eastern Shore Area	113.2	110.2	108.6	111.2	109.1	118.1
Total	97.0	87.4	87.1	86.2	88.5	90.1
Baltimore City	135.8	108.9	110.9	114.4	124.2	133.3
Baltimore County	78.5	77.7	74.6	77.0	73.8	79.9
Montgomery County	64.0	61.4	59.6	62.7	61.3	62.0
Prince George's County	88.6	82.9	87.3	85.5	87.7	87.5

**Table 9d. Trends in Maryland Birth Rates by Region and
Selected Jurisdiction of Residence, Age 25-29: 1990 - 1999**

Region/ Selected Jurisdiction	1990	1995	1996	1997	1998	1999
National Capital Area	105.7	90.8	97.6	97.1	97.0	98.7
Northwest Area	118.2	114.0	129.9	130.6	137.4	124.7
Southern Area	121.0	108.9	116.2	114.4	118.5	117.6
Eastern Shore Area	96.9	101.6	112.0	111.8	116.0	123.9
Total	110.0	97.7	106.2	104.1	107.3	107.7
Baltimore City	101.3	78.7	86.6	84.9	90.2	94.5
Baltimore County	111.5	105.8	111.4	105.7	112.4	110.3
Montgomery County	102.8	87.7	91.9	90.9	90.0	95.9
Prince George's County	108.4	93.7	102.9	103.1	103.9	101.4

**Table 9e. Trends in Maryland Birth Rates by Region and
Selected Jurisdiction of Residence, Age 30-34: 1990 - 1999**

Region/ Selected Jurisdiction	1990	1995	1996	1997	1998	1999
National Capital Area	95.5	99.3	93.1	92.9	95.4	96.3
Northwest Area	65.3	82.0	80.7	80.3	86.9	89.7
Southern Area	72.6	78.3	74.5	79.4	86.2	92.3
Eastern Shore Area	56.4	65.7	65.8	64.6	67.9	74.5
Total	83.0	87.7	84.0	84.3	88.4	90.5
Baltimore City	67.8	54.9	53.6	52.1	56.3	56.3
Baltimore County	87.0	90.9	88.0	86.7	86.3	89.4
Montgomery County	107.3	111.7	105.7	105.2	109.6	111.5
Prince George's County	83.4	86.7	80.3	80.2	80.6	80.5

**Table 9f. Trends in Maryland Birth Rates by Region and
Selected Jurisdiction of Residence, Age 35-39: 1990 - 1999**

Region/ Selected Jurisdiction	1990	1995	1996	1997	1998	1999
National Capital Area	44.4	47.3	47.3	46.7	50.2	50.8
Northwest Area	22.6	31.8	33.3	32.4	33.7	37.4
Southern Area	24.5	29.1	30.8	30.8	33.4	37.8
Eastern Shore Area	20.4	25.0	27.4	30.8	26.4	28.5
Total	34.3	38.5	38.9	38.8	40.5	42.0
Baltimore City	27.2	28.6	27.1	25.7	26.9	28.8
Baltimore County	33.7	36.7	38.2	38.6	38.8	38.5
Montgomery County	55.4	57.4	56.1	54.7	60.1	59.6
Prince George's County	32.5	36.7	38.0	38.1	39.4	41.1

**Table 9g. Trends in Maryland Birth Rates by Region and
Selected Jurisdiction of Residence, Age 40-44: 1990 - 1999**

Region/ Selected Jurisdiction	1990	1995	1996	1997	1998	1999
National Capital Area	8.3	10.0	10.1	10.7	11.3	11.4
Northwest Area	3.8	4.1	4.7	5.3	6.2	6.7
Southern Area	4.4	5.4	8.2	5.7	6.8	6.1
Eastern Shore Area	3.0	3.6	4.8	5.6	5.9	5.5
Total	5.5	7.0	7.6	7.8	8.2	8.5
Baltimore City	4.9	5.8	7.0	5.8	6.1	6.9
Baltimore County	4.2	6.4	6.8	7.2	7.5	7.1
Montgomery County	10.3	12.7	12.5	12.8	13.4	13.7
Prince George's County	6.0	7.2	7.6	8.5	9.0	8.8

**Table 9h. Trends in Maryland Birth Rates by Region and
Selected Jurisdiction of Residence, Age 45-49: 1990 - 1999**

Region/ Selected Jurisdiction	1990	1995	1996	1997	1998	1999
National Capital Area	0.1	0.5	0.5	0.7	0.6	0.8
Northwest Area	0.0	0.1	0.0	0.3	0.0	0.3
Southern Area	0.3	0.3	0.1	0.1	0.1	0.1
Eastern Shore Area	0.0	0.5	0.3	0.2	0.3	0.5
Total	0.1	0.3	0.3	0.4	0.4	0.5
Baltimore City	0.1	0.2	0.3	0.2	0.2	0.3
Baltimore County	0.1	0.2	0.2	0.2	0.2	0.5
Montgomery County	0.2	0.7	0.8	1.0	0.8	1.0
Prince George's County	0.0	0.1	0.2	0.4	0.4	0.5

Note: Regions are those used by Maryland Vital Statistics. The Northwest area includes Allegany, Frederick, Garrett and Washington counties. The Baltimore Metro Area includes Baltimore City and Anne Arundel, Baltimore, Carroll, Harford and Howard Counties. The Southern area includes Calvert, Charles and St. Mary's counties. The National Capital Area includes Montgomery and Prince George's counties. The Eastern Shore area includes the remaining nine counties.

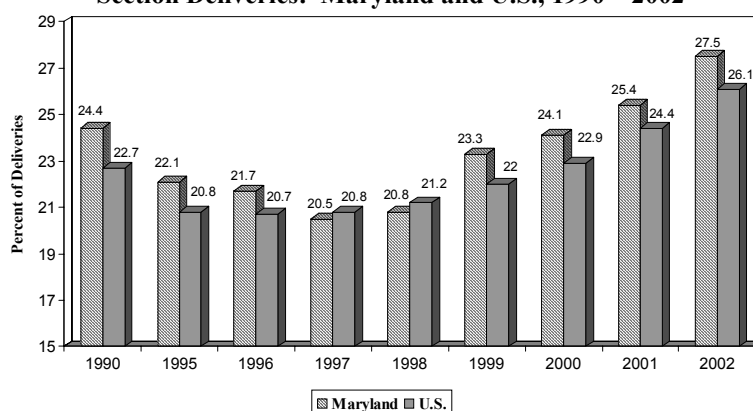
Source: Maryland Vital Statistics, Annual Reports

Cesarean Section Deliveries

The trend of declining cesarean section delivery rates (a percentage of all live births) seen in the early and mid 1990s has changed dramatically. As shown in Figure 6, the rate of cesarean section deliveries to Maryland residents declined through most of the 1990s to 20.5% of all deliveries in 1997. The percentage has risen faster every year since 1998 to 27.5% of all births in Maryland hospitals in 2002. Nationally, cesarean section deliveries are also increasing rapidly, rising to 26.1% of all births in 2002, the highest level ever reported in the U.S.

Preliminary data from the CDC indicate that the cesarean delivery rate increased in all states for 2002.⁴

Figure 6. Trends in Percentage of Cesarean Section Deliveries: Maryland and U.S., 1990 – 2002



Source: Maryland Vital Statistics, Annual Reports; National Center for Health Statistics, National Vital Statistics Reports

Table 10 shows the trends in cesarean section deliveries as a percentage of total birth discharges by jurisdiction and by region for 1980 through 2002. This is based on data from the Maryland Hospital Discharge Abstract, and is slightly different than the data above reported as a percentage of live births.

Healthy People 2010 is a set of established national health objectives developed by the Department of Health and Human Services, states and other public and private organizations for use by individuals and organizations to guide health promotion activities. Healthy People 2010 covers 28 focus areas, including maternal, infant and child health. One of the objectives for improving health calls for reductions in cesarean births among low risk women. The target for women giving birth for the first time calls for a 17 percent reduction from the 1998 national baseline rate of 18% of live births, to 15% by 2010. The target for women who have had a prior cesarean birth calls for a 12.5% reduction, from 72% of births in 1998 to 63% by 2010.

⁴ *ibid*, NCHS, Hamilton, BE, et. al..

**Table 10a. Trends in Cesarean Section Delivery Rates As a Percent
of all Deliveries: Maryland, Selected Years, 1980-2002**

Jurisdiction	1980	1990	1995	2000	2001	2002
Allegany County	10.5%	22.4%	18.5%	22.6%	24.9%	27.8%
Anne Arundel County	21.1%	27.2%	20.3%	23.1%	27.9%	29.4%
Baltimore City	19.4%	22.2%	20.7%	19.8%	24.0%	25.5%
Baltimore County	21.8%	24.7%	24.0%	23.0%	27.6%	29.5%
Calvert County	34.7%	26.2%	22.1%	21.8%	27.9%	25.6%
Carroll County	16.3%	29.4%	21.3%	22.4%	29.1%	27.3%
Cecil County	12.8%	20.9%	20.5%	17.4%	21.8%	24.2%
Charles County	17.9%	25.7%	17.8%	20.7%	27.5%	24.1%
Frederick County	15.4%	22.8%	21.8%	18.4%	22.0%	22.3%
Garrett County	8.3%	10.4%	13.4%	9.8%	16.7%	22.5%
Harford County	18.4%	18.2%	17.3%	12.8%	18.9%	18.8%
Howard County	26.9%	24.3%	20.1%	23.3%	24.0%	27.3%
Kent County	32.3%	42.1%	22.2%	16.9%	14.8%	24.7%
Montgomery County	21.8%	26.5%	21.4%	22.4%	25.5%	28.7%
Prince George's County	22.3%	25.9%	24.8%	24.0%	27.9%	29.1%
St. Mary's County	21.2%	33.0%	27.4%	19.7%	29.0%	27.9%
Talbot County	16.9%	19.2%	11.2%	10.7%	14.7%	19.0%
Washington County	14.0%	22.8%	20.7%	17.6%	21.8%	23.3%
Wicomico County	20.2%	25.3%	25.9%	25.0%	29.2%	32.3%
MARYLAND TOTAL	19.9%	24.4%	21.7%	21.5%	25.4%	27.3%

**Table 10b. Trends in Cesarean Section Delivery Rates As a Percent
of all Deliveries: Maryland, Selected Years, 1980-2002**

Region/ Selected Jurisdiction	1980	1990	1995	2000	2001	2002
Western Maryland	12.7%	21.8%	20.2%	19.8%	22.3%	23.7%
Montgomery County	21.8%	26.5%	21.4%	24.8%	25.5%	28.7%
Southern Maryland	22.7%	26.7%	24.2%	26.3%	28.0%	28.0%
Central Maryland	20.2%	23.4%	21.6%	24.1%	25.6%	27.1%
Eastern Shore	18.4%	24.6%	21.3%	21.9%	23.4%	27.1%
State Total	19.9%	24.4%	21.7%	24.0%	25.4%	27.3%
Baltimore City	19.4%	22.2%	20.7%	23.2%	24.0%	25.5%
Baltimore County	21.8%	24.7%	24.0%	25.1%	27.6%	29.5%
Montgomery County	21.8%	26.5%	21.4%	24.8%	25.5%	28.7%
Prince George's County	22.3%	25.9%	24.8%	27.9%	27.9%	29.1%

Note: Western Maryland includes Allegany, Garrett, Frederick and Washington counties. Southern Maryland includes Charles, Calvert, St. Mary's and Prince George's counties. Central Maryland includes Anne Arundel, Baltimore, Carroll, Harford and Howard counties and Baltimore City.

Source: Maryland Hospital Discharge Abstract

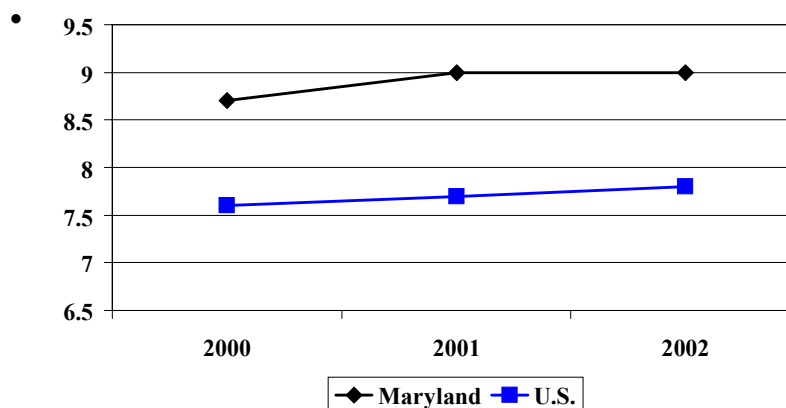
Selected Health Status Indicators

Low Birth Weight

Another Healthy People objective calls for reductions in low birth weight (less than 2,500 grams) from 7.6% of births in 1998 to 5% by 2010. It also calls for a decrease in very low birth weight (under 1,500 grams) from 1.4% of births to 0.9% by 2010.

The percent of low birth weight (LBW) infants in Maryland remained at 9.0 in 2002 after increasing from 8.7 to 9.0 in 2001. Figure 7 illustrates Maryland's LBW compared with the national rate, which increased to 7.8% in 2002, the highest level in more than three decades. According to the National Vital Statistics Report, this trend has been on the rise since the mid-1980s and is strongly influenced by the climb in the rate of multiple births.

**Figure 7. Trend in Low Birth Weight:
Maryland and U.S., 2000 - 2002**



Source: National Vital Statistics Reports, Vol.51, No.11

LBW is also more prevalent when the mother's age is in the lowest or highest age range (i.e., under 18 and over 40), and twice as prevalent when the mother's race is black than when the mother's race is white, based on Maryland Vital Statistics Reports. As shown in Figure 8, in Maryland in 2002, 6.9 percent of white infants were LBW, compared to 13.1 percent of black infants, both of which increased over 2001. Although Maryland's percentage of low birth weight infants is higher than the national average of 7.8% in 2002, the percentages are similar by race.

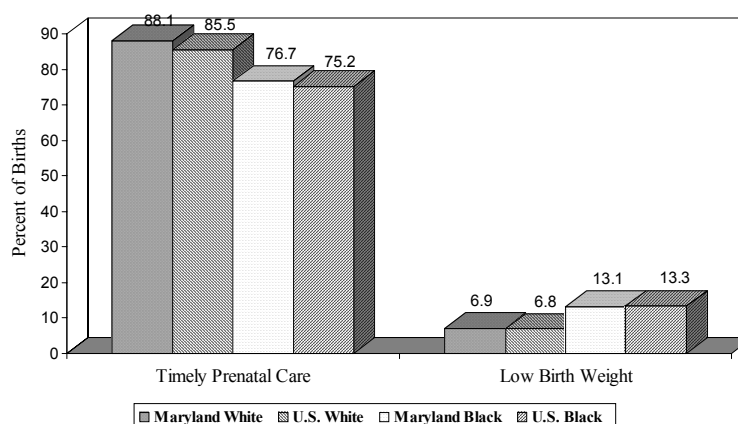
Prenatal Care

Appropriate prenatal care can promote healthier pregnancies and reduce the risk of poor pregnancy outcomes. Healthy People 2010's objectives call for an increase in the proportion of

women who receive early and adequate prenatal care. Prenatal care should start in the first trimester and continue throughout pregnancy. Prenatal care includes three major components: risk assessment, treatment for medical conditions or risk reduction, and education. In Maryland, the percentage of births to women receiving prenatal care in the first trimester in 2002 was 84.1%, up from 83.7% in 2001.

Timely prenatal care in Maryland has improved slightly over the 2001 rate of 83.7%, and is slightly better than the national average of 83.8%. However, timely prenatal care varies considerably by race, as shown below in Figure 8. Based on the preliminary data from the National Vital Statistics Reports for 2002, most of the improvement in timely prenatal care in Maryland is among white mothers, not black mothers. The rate for black mothers increased from 76.5% in 2001 to 76.7% in 2002, while the rate for white mothers increased from 87.7% to 88.1%.

Figure 8. Comparison of Racial Differences in Selected Health Status Indicators: Maryland and U.S., 2002



Source: National Center for Health Statistics, National Vital Statistics Reports

Utilization and Financing of Hospital Obstetric Services

Discharges

Obstetric service discharges increased by only 124 discharges over 2001, an increase of less than 0.2%. Obstetric service discharges have declined since the early 1990s, from over 81,100 in 1990 to 72,700 in 2002. Table 11 shows the trend in Maryland acute general hospital obstetric service discharges by county and by selected jurisdictions from 1980 through 2002. Table A1 in Appendix A shows trends in discharges by hospital.

**Table 11a. Trends in Obstetric Discharges, by Jurisdiction of Hospitalization:
Maryland, Selected Years, 1980 - 2002**

Jurisdiction	1980	1990	1995	1996	1997	1998	1999	2000	2001	2002
Allegany County	1,912	1,423	1,284	1,274	1,223	1,198	1,114	1,144	1,112	1,119
Anne Arundel County	2,208	3,236	3,221	3,324	3,498	3,843	4,279	4,564	4,826	4,845
Baltimore City	20,129	25,234	17,961	17,235	16,767	17,192	17,093	17,084	16,851	16,609
Baltimore County	8,111	12,125	11,552	11,238	10,748	10,859	10,633	10,816	10,021	9,884
Calvert County	506	758	831	845	843	887	819	883	875	960
Carroll County	767	690	883	972	1,131	1,257	1,282	1,349	1,367	1,322
Cecil County	493	509	751	752	730	724	798	746	753	800
Charles County	520	515	768	535	740	939	1,027	1,107	1,036	1,102
Dorchester County	379	399	285	293	141	6	8	17	7	7
Frederick County	1,256	2,146	2,111	2,101	2,131	2,098	1,962	2,221	2,257	2,355
Garrett County	398	428	344	348	362	310	336	309	279	273
Harford County	1,064	847	786	838	784	831	738	769	1,185	1,359
Howard County	1,206	2,852	3,396	3,212	2,993	3,046	3,103	3,318	3,391	3,358
Kent County	304	282	241	231	259	244	252	268	233	256
Montgomery County	7,281	16,926	16,117	16,133	15,442	15,590	15,888	16,300	16,246	16,189
Prince George's County	4,703	6,445	6,577	6,855	6,137	5,960	6,016	6,014	5,948	6,025
Somerset County	152	2	1	0	1	1	2	1	4	0
St. Mary's County	661	928	778	877	911	828	899	858	881	970
Talbot County	959	1,208	875	800	1,010	1,064	1,097	1,148	1,132	1,085
Washington County	1,715	1,787	1,736	1,702	1,772	1,760	1,821	1,816	1,852	1,959
Wicomico County	1,936	2,444	2,150	2,271	2,225	2,158	2,290	2,345	2,337	2,241
Worcester County	0	0	6	10	0	5	3	2	2	1
MARYLAND TOTAL	56,660	81,184	72,654	71,846	69,848	70,800	71,460	73,079	72,595	72,719

**Table 11b. Trends in Obstetric Discharges, by Region and Selected Jurisdiction:
Maryland, Selected Years, 1980 - 2002**

Region/ Selected Jurisdiction	1980	1990	1995	1996	1997	1998	1999	2000	2001	2002
Western Maryland	5,281	5,784	5,475	5,425	5,488	5,366	5,233	5,490	5,500	5,706
Montgomery County	7,281	16,926	16,117	16,133	15,442	15,590	15,888	16,300	16,246	16,189
Southern Maryland	6,390	8,646	8,954	9,112	8,631	8,614	8,761	8,862	8,740	9,057
Central Maryland	33,485	44,984	37,799	36,819	35,921	37,028	37,128	37,900	37,641	37,377
Eastern Shore	4,223	4,844	4,309	4,357	4,366	4,202	4,450	4,527	4,468	4,390
State Total	56,660	81,184	72,654	71,846	69,848	70,800	71,460	73,079	72,595	72,719
Baltimore City	20,129	25,234	17,961	17,235	16,767	17,192	17,093	17,084	16,851	16,609
Baltimore County	8,111	12,125	11,552	11,238	10,748	10,859	10,633	10,816	10,021	9,884
Montgomery County	7,281	16,926	16,117	16,133	15,442	15,590	15,888	16,300	16,246	16,189
Prince George's County	4,703	6,445	6,577	6,855	6,137	5,960	6,016	6,014	5,948	6,025

Notes: No hospitals are located in Caroline and Queen Anne's counties. Most of the 14 Maryland hospitals without obstetric programs occasionally treat and admit obstetric patients.

Western Maryland includes Allegany, Garrett, Frederick and Washington counties. Southern Maryland includes Charles, Calvert, St. Mary's and Prince George's counties. Central Maryland includes Anne Arundel, Carroll, Baltimore, Harford and Howard counties and Baltimore City.

Source: Maryland Hospital Discharge Abstract

Most obstetric discharges occur in the four largest jurisdictions of Baltimore City and Montgomery, Baltimore and Prince George's counties. As Table 11 shows, in 1990 almost 75% of the obstetric discharges in Maryland occurred in these four jurisdictions, declining to 67% of discharges in 2002. While the number of obstetric discharges is relatively the same in 2002 as in 1995, more discharges now occur in the suburban central Maryland counties, and the number of discharges declined in Baltimore and Prince George's counties and Baltimore City.

Average Length of Stay (ALOS)

In 2002 ALOS reached 2.76 days, an increase of less than 1% over 2001. This is the highest ALOS in Maryland since 1989. Figure 9 shows this 20 year trend in ALOS in Maryland, and Figure 10 shows the ALOS trend in cesarean section deliveries compared with other obstetric discharges. This trend may reflect a combination of greater acceptance of longer length of stay since the mid-1990s and the increase in the proportion of cesarean section deliveries.

Figure 9. Trend in Obstetric Average Length of Stay: Maryland, 1980 - 2002

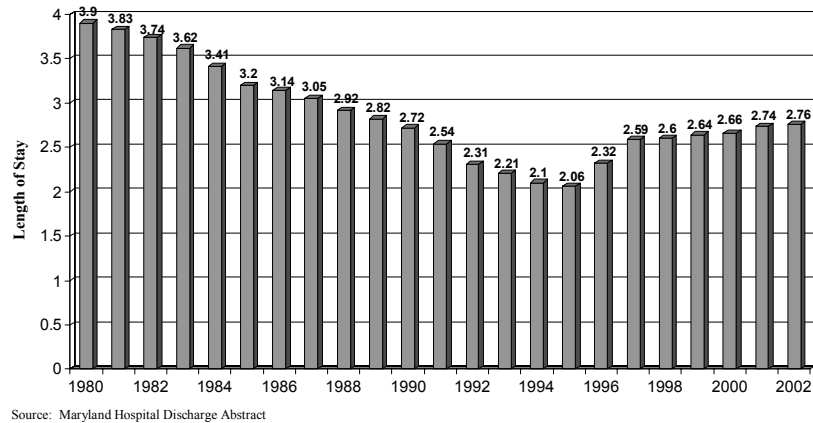


Figure 10. Trends in Average Length of Stay by Type of Discharge: Maryland, Selected Years, 1980 - 2002

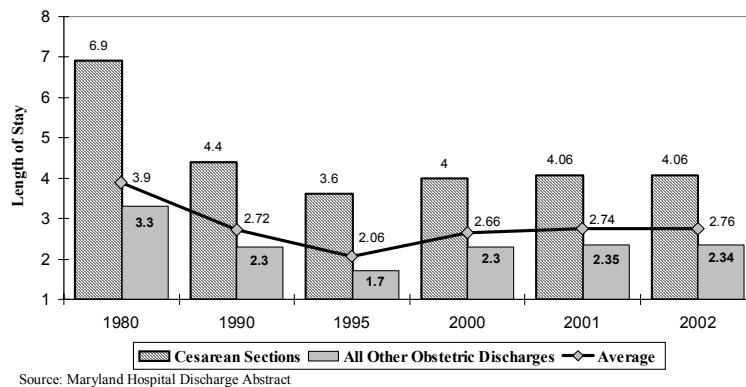


Table 12 shows that ALOS varies by county and by region, with Western Maryland and more rural counties having the shortest ALOS, and Central Maryland, particularly Baltimore and Baltimore County, having the longest ALOS.

**Table 12a. Trend in Obstetric Average Length of Stay,
by Jurisdiction of Hospitalization: Maryland, 1980 - 2002**

Jurisdiction	1980	1990	1995	1996	1997	1998	1999	2000	2001	2002
Allegany County	3.67	2.30	1.86	2.03	2.12	2.14	2.18	2.19	2.22	2.24
Anne Arundel County	3.62	2.72	1.66	1.89	2.33	2.39	2.41	2.51	2.58	2.50
Baltimore City	4.13	2.95	2.47	2.67	2.86	2.85	2.92	2.95	3.02	3.07
Baltimore County	4.06	2.68	2.13	2.44	2.74	2.77	2.78	2.82	3.02	2.97
Calvert County	3.87	2.45	1.84	2.00	2.19	2.13	2.16	2.21	2.31	2.36
Carroll County	3.44	2.58	1.56	1.90	2.33	2.27	2.35	2.36	2.43	2.47
Cecil County	3.15	2.04	1.53	1.71	1.85	1.93	1.93	1.97	2.21	2.15
Charles County	3.64	2.42	2.09	2.28	2.75	2.26	2.29	2.29	2.33	2.49
Dorchester County	3.22	2.94	1.82	2.17	2.41	4.17	2.88	1.65	2.86	1.71
Frederick County	3.48	2.38	1.83	2.11	2.35	2.39	2.40	2.49	2.55	2.55
Garrett County	3.29	2.33	1.90	1.93	2.02	2.21	1.93	1.87	2.01	2.14
Harford County	3.81	1.97	1.32	1.50	1.65	1.72	1.70	1.88	2.21	2.23
Howard County	3.87	2.64	1.68	2.02	2.42	2.58	2.56	2.62	2.73	2.75
Kent County	3.99	2.57	1.82	2.07	2.39	2.31	2.54	2.54	2.39	2.61
Montgomery County	3.85	2.68	1.93	2.21	2.62	2.63	2.70	2.71	2.76	2.84
Prince George's County	4.00	2.73	2.12	2.45	2.60	2.64	2.62	2.59	2.60	2.63
Somerset County	3.96	2.50	1.00	-	3.00	3.00	1.50	4.00	2.25	-
St. Mary's County	2.95	2.28	1.72	1.89	2.08	2.13	2.08	2.11	2.18	2.17
Talbot County	2.98	2.53	1.62	1.92	2.29	2.20	2.30	2.31	2.27	2.35
Washington County	3.57	2.05	1.69	1.83	1.99	1.90	1.99	2.00	2.04	2.05
Wicomico County	3.45	2.82	1.98	2.37	2.42	2.38	2.46	2.50	2.53	2.48
Worcester County	-	-	2.17	2.30	-	2.20	1.00	3.00	2.50	1.00
MARYLAND TOTAL	3.90	2.72	2.06	2.32	2.59	2.60	2.64	2.66	2.74	2.76

**Table 12b. Trend in Obstetric Average Length of Stay,
by Region and Selected Jurisdiction: Maryland, 1980 - 2002**

Region/ Selected Jurisdiction	1980	1990	1995	1996	1997	1998	1999	2000	2001	2002
Western Maryland	3.56	2.25	1.80	1.99	2.16	2.16	2.18	2.23	2.28	2.30
Montgomery County	3.85	2.68	1.93	2.21	2.62	2.63	2.70	2.71	2.76	2.84
Southern Maryland	3.85	2.64	2.06	2.34	2.52	2.49	2.48	2.47	2.50	2.54
Central Maryland	4.04	2.82	2.18	2.43	2.69	2.71	2.75	2.79	2.89	2.89
Eastern Shore	3.34	2.66	1.81	2.15	2.29	2.26	2.33	2.37	2.40	2.39
State Total	3.90	2.72	2.06	2.32	2.59	2.60	2.64	2.66	2.74	2.76
Baltimore City	4.13	2.95	2.47	2.67	2.86	2.85	2.92	2.95	3.02	3.07
Baltimore County	4.06	2.68	2.13	2.44	2.74	2.77	2.78	2.82	3.02	2.97
Montgomery County	3.85	2.68	1.93	2.21	2.62	2.63	2.70	2.71	2.76	2.84
Prince George's County	4.00	2.73	2.12	2.45	2.60	2.64	2.62	2.59	2.60	2.63

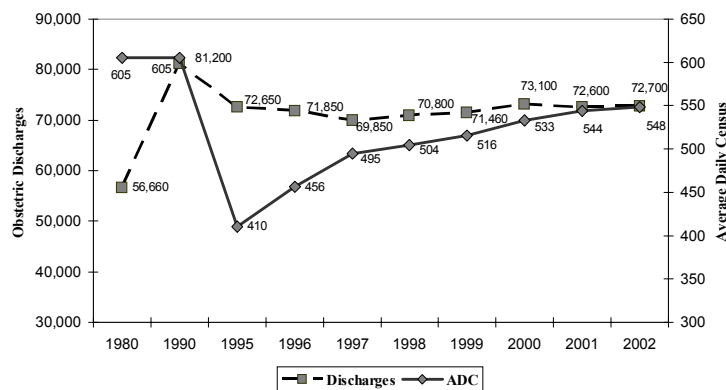
Note: Western Maryland includes Allegany, Garrett, Frederick and Washington counties. Southern Maryland includes Charles, Calvert, St. Mary's and Prince George's counties. Central Maryland includes Anne Arundel, Carroll, Baltimore, Harford and Howard counties and Baltimore City.

Source: Maryland Health Department Abstract

Average Daily Census (ADC)

Average daily census, the daily expression of patient days, increased to 548 obstetric patients per day in Maryland in 2002, only four more patients than last year. This represents less than a half a percent increase over 2001. In 1995, with both discharges and ALOS declining, Maryland saw the lowest average daily census in obstetrics in at least 20 years. ADC began to increase after 1995, even when discharges declined, because ALOS was increasing. With the increase in discharges beginning in 1998, and increasing ALOS, ADC has increased 10% since 1997, compared to a 4% increase in discharges in the same five years. A comparison of the trends in discharges and ADC is shown below in Figure 11. Trends in ADC by jurisdiction and region are shown in Table 13.

Figure 11. Trends in Obstetric Discharges and Average Daily Census: Maryland, 1980 - 2002



Source: Maryland Hospital Discharge Abstract

Table 13a. Trend in Obstetric Average Daily Census, by Jurisdiction: Maryland, 1980 - 2002

Jurisdiction	1980	1990	1995	1996	1997	1998	1999	2000	2001	2002
Allegany County	19.2	9.0	6.5	7.1	7.1	7.0	6.6	6.9	6.8	6.9
Anne Arundel County	21.9	24.2	14.7	17.2	22.3	25.2	28.3	31.4	34.2	33.1
Baltimore City	227.7	203.9	121.8	126.1	131.5	134.1	136.9	137.9	139.5	139.5
Baltimore County	90.2	88.9	67.5	75.1	80.6	82.5	81.0	83.7	82.8	80.3
Calvert County	5.4	5.1	4.2	4.6	5.1	5.2	4.8	5.4	5.5	6.2
Carroll County	7.2	4.9	3.8	5.1	7.2	7.8	8.3	8.7	9.1	8.9
Cecil County	4.3	2.8	3.1	3.5	3.7	3.8	4.2	4.0	4.6	4.7
Charles County	5.2	3.4	4.4	3.3	5.6	5.8	6.4	7.0	6.6	7.5
Dorchester County	3.3	3.2	1.4	1.7	0.9	0.1	0.1	0.1	0.1	0.0
Frederick County	12.0	14.0	10.6	12.1	13.7	13.7	12.9	15.1	15.8	16.4
Garrett County	3.6	2.7	1.8	1.8	2.0	1.9	1.8	1.6	1.5	1.6
Harford County	11.1	4.6	2.8	3.4	3.6	3.9	3.4	4.0	7.2	8.3
Howard County	12.8	20.6	15.6	17.7	19.8	21.5	21.7	23.8	25.3	25.2
Kent County	3.3	2.0	1.2	1.3	1.7	1.5	1.8	1.9	1.5	1.8
Montgomery County	76.8	124.2	85.2	97.5	110.7	112.5	117.3	120.9	123.0	125.6
Prince George's County	51.6	48.2	38.3	46.0	43.7	43.0	43.2	42.7	42.3	43.3
Somerset County	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
St. Mary's County	5.3	5.8	3.7	4.5	5.2	4.8	5.1	5.0	5.3	5.8
Talbot County	7.8	8.4	3.9	4.2	6.3	6.4	6.9	7.3	7.0	7.0
Washington County	16.8	10.0	8.1	8.5	9.6	9.2	9.9	9.9	10.3	11.0
Wicomico County	18.3	18.9	11.7	14.8	14.7	14.1	15.5	16.1	16.2	15.2
Worcester County	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
MARYLAND TOTAL	605.5	604.6	410.2	455.9	495.1	504.1	516.1	533.2	544.5	548.2

**Table 13b. Trend in Obstetric Average Daily Census,
by Region and Selected Jurisdiction: Maryland, 1980 - 2002**

Region/ Selected Jurisdiction	1980	1990	1995	1996	1997	1998	1999	2000	2001	2002
Western Maryland	51.6	35.7	26.9	29.6	32.5	31.8	31.2	33.5	34.4	35.8
Montgomery County	76.8	124.2	85.2	97.5	110.7	112.5	117.3	120.9	123.0	125.6
Southern Maryland	67.5	62.5	50.5	58.5	59.5	58.8	59.6	60.0	59.8	62.7
Central Maryland	370.9	347.0	226.2	244.7	265.0	275.0	279.6	289.5	298.0	295.3
Eastern Shore	35.3	32.1	19.9	23.9	26.5	25.9	28.4	29.3	29.4	28.7
State Total	605.5	604.6	410.2	455.9	495.1	504.1	516.1	533.2	544.5	548.2
Baltimore City	227.7	203.9	121.8	126.1	131.5	134.1	136.9	137.9	139.5	139.5
Baltimore County	90.2	88.9	67.5	75.1	80.6	82.5	81.0	83.7	82.8	80.3
Montgomery County	76.8	124.2	85.2	97.5	110.7	112.5	117.3	120.9	123.0	125.6
Prince George's County	51.6	48.2	38.3	46.0	43.7	43.0	43.2	42.7	42.3	43.3

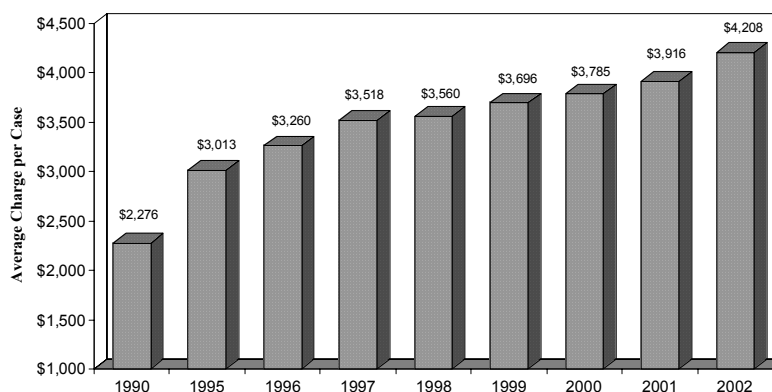
Note: Western Maryland includes Allegany, Garrett, Frederick and Washington counties. Southern Maryland includes Charles, Calvert, St. Mary's and Prince George's counties. Central Maryland includes Anne Arundel, Carroll, Baltimore, Harford and Howard counties and Baltimore City.

Source: Maryland Hospital Discharge Abstract

Average Charge per Case

In 2002 the average charge for obstetric admissions in Maryland reached \$4,208 per case, as shown in Figure 12. This is a 7.5% increase over the previous year, the largest increase since 1997, and a nearly 40% increase since 1995. The highest average charge per case is in Baltimore City and Prince George's County, and the lowest is found in Western Maryland (with the exception of Allegany County) and Southern Maryland. Average charge per case is shown in Table 14 by county and by selected jurisdictions, and in Table A4 in Appendix A by hospital. Hospital charges ranged from a low of \$2,901 at Washington County Hospital in Hagerstown to \$6,912 at Maryland General Hospital in Baltimore.⁵

**Figure 12. Trend in Average Charge per Case:
Maryland, 1980 - 2002**



Source: Maryland Hospital Discharge Abstract

Note: Figures are not inflation-adjusted.

⁵ Among community hospitals with obstetrics services; this excludes the two academic medical centers, and hospitals with occasional obstetric discharges but without obstetric services.

**Table 14a. Trends in Obstetric Services Average Charge Per Case,
by Jurisdiction of Hospitalization: Maryland, 1980 - 2002**

Jurisdiction	1980	1990	1995	1996	1997	1998	1999	2000	2001	2002
Allegany County	\$674	\$2,082	\$2,898	\$3,119	\$3,245	\$3,320	\$3,274	\$3,806	\$4,075	\$3,912
Anne Arundel County	\$956	\$2,018	\$2,653	\$3,030	\$3,652	\$3,774	\$3,652	\$3,553	\$3,710	\$3,980
Baltimore City	\$1,387	\$2,688	\$3,720	\$3,870	\$3,983	\$4,129	\$4,547	\$4,769	\$4,968	\$5,488
Baltimore County	\$1,236	\$2,194	\$2,937	\$3,064	\$3,270	\$3,563	\$3,667	\$3,801	\$3,843	\$3,975
Calvert County	\$1,003	\$2,001	\$2,591	\$2,659	\$2,899	\$2,981	\$3,041	\$3,110	\$3,162	\$3,451
Carroll County	\$849	\$2,284	\$2,279	\$2,526	\$2,920	\$3,034	\$3,391	\$3,745	\$3,912	\$3,967
Cecil County	\$753	\$2,288	\$2,588	\$2,816	\$3,035	\$3,544	\$3,310	\$3,235	\$3,723	\$4,735
Charles County	\$991	\$1,614	\$2,278	\$2,781	\$3,289	\$3,582	\$3,100	\$2,837	\$3,113	\$3,114
Dorchester County	\$745	\$2,240	\$2,179	\$2,744	\$3,205	\$3,127	\$3,038	\$2,361	\$2,659	\$2,150
Frederick County	\$735	\$1,751	\$2,397	\$2,557	\$2,666	\$2,622	\$2,661	\$2,568	\$2,959	\$2,977
Garrett County	\$634	\$2,087	\$2,216	\$2,586	\$2,430	\$2,692	\$3,077	\$2,976	\$3,228	\$3,947
Harford County	\$797	\$1,638	\$2,559	\$2,980	\$2,935	\$2,828	\$2,765	\$3,341	\$3,409	\$4,566
Howard County	\$1,453	\$2,210	\$2,601	\$3,152	\$3,492	\$3,293	\$3,252	\$3,341	\$3,443	\$3,524
Kent County	\$954	\$2,649	\$3,074	\$3,538	\$3,823	\$3,601	\$3,149	\$4,101	\$5,277	\$2,720
Montgomery County	\$1,284	\$1,982	\$2,796	\$3,107	\$3,576	\$3,387	\$3,408	\$3,445	\$3,528	\$3,915
Prince George's County	\$1,210	\$2,596	\$3,332	\$3,672	\$3,716	\$3,621	\$3,855	\$3,896	\$4,004	\$4,051
Somerset County	\$1,043	\$2,333	\$2,181	\$0	\$5,331	\$5,252	\$12,297	\$9,626	\$5,615	\$0
St. Mary's County	\$783	\$1,862	\$2,498	\$2,853	\$3,106	\$3,263	\$3,369	\$3,347	\$3,689	\$3,758
Talbot County	\$1,038	\$1,658	\$2,329	\$2,693	\$3,207	\$3,338	\$3,543	\$3,551	\$3,518	\$4,074
Washington County	\$687	\$1,964	\$2,338	\$2,583	\$2,814	\$2,512	\$2,510	\$2,552	\$2,757	\$2,901
Wicomico County	\$985	\$1,745	\$2,308	\$2,584	\$3,070	\$3,159	\$3,225	\$3,203	\$3,164	\$3,447
Worcester County	\$0	\$0	\$1,927	\$3,130	\$0	\$2,898	\$4,881	\$4,271	\$1,797	\$2,783
MARYLAND TOTAL	\$1,192	\$2,276	\$3,013	\$3,260	\$3,518	\$3,560	\$3,696	\$3,785	\$3,916	\$4,208

**Table 14b. Trends in Obstetric Services Average Charge Per Case,
by Region and Selected Jurisdiction: Maryland, 1980 - 2002**

Regions/ Selected Jurisdictions	1980	1990	1995	1996	1997	1998	1999	2000	2001	2002
Western Maryland	\$690	\$1,923	\$2,485	\$2,699	\$2,827	\$2,746	\$2,766	\$2,843	\$3,130	\$3,180
Montgomery County	\$1,284	\$1,982	\$2,796	\$3,107	\$3,576	\$3,387	\$3,408	\$3,445	\$3,528	\$3,915
Southern Maryland	\$1,131	\$2,407	\$3,101	\$3,447	\$3,535	\$3,517	\$3,640	\$3,633	\$3,782	\$3,842
Central Maryland	\$1,294	\$2,450	\$3,232	\$3,430	\$3,640	\$3,791	\$4,007	\$4,156	\$4,282	\$4,629
Eastern Shore	\$948	\$1,874	\$2,395	\$2,706	\$3,145	\$3,296	\$3,319	\$3,348	\$3,459	\$3,792
State Total	\$1,192	\$2,276	\$3,013	\$3,260	\$3,518	\$3,560	\$3,695	\$3,785	\$3,916	\$4,208
Baltimore City	\$1,387	\$2,688	\$3,720	\$3,870	\$3,983	\$4,129	\$4,545	\$4,769	\$4,968	\$5,488
Baltimore County	\$1,236	\$2,194	\$2,937	\$3,064	\$3,270	\$3,563	\$3,666	\$3,801	\$3,843	\$3,975
Montgomery County	\$1,284	\$1,982	\$2,796	\$3,107	\$3,576	\$3,387	\$3,408	\$3,445	\$3,528	\$3,915
Prince George's County	\$1,210	\$2,596	\$3,332	\$3,672	\$3,716	\$3,621	\$3,854	\$3,896	\$4,004	\$4,051

Note: Western Maryland includes Allegany, Garrett, Frederick and Washington counties. Southern Maryland includes Charles, Calvert, St. Mary's and Prince George's counties. Central Maryland includes Anne Arundel, Carroll, Baltimore, Harford and Howard counties and Baltimore City

Source: Maryland Hospital Discharge Abstract

Payer Source

Table 15 shows trends in payer source and payer mix in Maryland from 1980 through 2002. This table indicates that there are very few obstetric discharges without insurance coverage of some kind. Medicaid covers over one third of all obstetric discharges in Maryland hospitals, up from just one quarter in the 1990s. The number of Medicaid discharges has increased steadily since 1997. The number of discharges covered by Blue Cross and Commercial plans has also increased which, in combination, accounted for 34% of obstetric discharges. The number of obstetric discharges covered by health maintenance organizations (HMOs) has declined notably over the last five years, from 41% of obstetric discharges in 1998 to just 27% in 2002. In 1998, HMOs clearly accounted for the largest share of obstetric discharges. In 2002, however, both Medicaid and Commercial/Blue Cross payers had a greater share of the market. Table A5 in Appendix A shows the current payer mix by hospital in 2002.

Table 15a. Trend in Hospital Obstetric Service Discharges by Payer Source: Maryland, 1990 - 2002

Payer	1990	1995	1996	1997	1998	1999	2000	2001	2002
Medicare	224	122	103	192	213	261	294	179	122
All Medicaid	20,397	20,404	20,586	18,332	19,380	21,653	23,716	24,782	26,338
Medicaid	20,397	17,931	18,236	14,205	4,990	5,216	5,186	5,919	6,127
Medicaid HMO	0	2,473	2,350	4,127	14,390	16,437	18,530	18,863	20,211
HMO	17,249	25,168	26,237	27,131	28,825	26,860	25,052	22,279	19,755
Blue Cross	13,827	9,796	9,940	9,760	9,569	10,206	11,436	12,943	14,183
Commercial	22,747	12,696	11,397	10,606	10,084	10,097	10,490	10,777	10,509
Self Pay	5,596	3,758	2,762	2,755	2,044	1,499	1,327	810	803
No Charge	21	2	12	14	1	15	11	6	8
Other	1,123	696	801	1,039	675	865	738	819	1,001
Total	81,184	72,642	71,838	69,829	70,791	71,456	73,064	72,595	72,719

Table 15b. Trend in Hospital Obstetric Service Payer Mix by Payer Source: Maryland, 1990 - 2002

Payer	1990	1995	1996	1997	1998	1999	2000	2001	2002
Medicare	0.3%	0.2%	0.1%	0.3%	0.3%	0.4%	0.4%	0.2%	0.2%
All Medicaid	25.1%	28.1%	28.7%	26.3%	27.4%	30.3%	32.5%	34.1%	36.2%
HMO	21.2%	34.6%	36.5%	38.9%	40.7%	37.6%	34.3%	30.7%	27.2%
Blue Cross	17.0%	13.5%	13.8%	14.0%	13.5%	14.3%	15.7%	17.8%	19.5%
Commercial	28.0%	17.5%	15.9%	15.2%	14.2%	14.1%	14.4%	14.8%	14.5%
Self Pay	6.9%	5.2%	3.8%	3.9%	2.9%	2.1%	1.8%	1.1%	1.1%
No Charge	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other	1.4%	1.0%	1.1%	1.5%	1.0%	1.2%	1.0%	1.1%	1.4%

Notes: "Other" may include other government, Title V, workmen's comp, and payer unknown. In 1995, Medicaid HMO includes Medicaid MSO (90 cases).
Source: Maryland Hospital Discharge Abstract

III. 2007 Utilization Forecast: Maryland Hospital Obstetric Services

Description of Methodology

The methodology used to forecast hospital obstetric services discharges and average daily census is based on the methodology originally adopted by the Maryland Health Resources Planning Commission in the State Health Plan chapter, COMAR 10.24.10. This methodology, based on birth projections, Vital Statistics data, and assumptions about possible changes in average length of stay, is intended for use by hospitals when planning for obstetric services, and by state agencies interested in projected obstetric services utilization.

The Maryland Department of Planning (MDP) makes projections annually of the number of births to Maryland residents for use in their public school projection report. Migration patterns based on data from Maryland Vital Statistics are then applied to the projections of births by jurisdiction of residence to get a number of births by jurisdiction of birth. Then, based on data from the Maryland Hospital Discharge Abstract, the proportion of hospital discharges in the non-birth DRGs (see Table 1) is used to convert the number of expected births to a number of projected discharges. Finally, making assumptions about obstetric services average length of stay by jurisdiction based on historical trends, an estimate of total patient days and average daily census can be made.

Obstetric Discharges: 2007

The forecast of future obstetric discharges based on MDP's birth projections, indicates that discharges are projected to decline by 2007. Forecasting average daily census is then a function of the assumptions about future trends in average length of stay. The ALOS assumptions shown in Table 16 suggest a range of expected length of stay based on a review of the recent trends in ALOS. Length of stay is not likely to continue to increase significantly, as it has now reached a level greater than before it began to decline sharply in the mid 1990s. By projecting a range within which ALOS is expected to fall by 2007, the uncertain timing of any easing of the recent volatile nature of ALOS can be taken into account.

Table 16. Target Year Expected Average Length of Stay

Base Year ALOS		Target Year Expected ALOS		
Non C-Sections*	Cesarean Sections		Non C-Sections	Cesarean Sections
2.35	4.06	Minimum	2.20	3.95
		Maximum	2.40	4.15

* All Other Obstetric Discharges, includes DRGs 372-379 and 382-384

Table 17 below presents the forecasted discharges and ADC by jurisdiction, and a comparison of the forecast with actual discharges and ADC in the base year, 2000. A complete description of the methodology used to reach the 2007 forecast can be found in Appendix B.

Table 17a. Utilization Forecast Methodology's Projected Discharges and Average Daily Census: Comparison of Base Year (2001) and Target Year (2007), by Jurisdiction

Jurisdiction of Utilization	Discharges		Average Daily Census		
	Base Year (2001)	Target Year (2007)	Base Year	Target Year Minimum	Target Year Maximum
Allegany County	1,112	1,091	6.8	6.3	6.7
Anne Arundel County	4,826	4,234	34.2	28.5	30.7
Baltimore City	16,851	17,096	139.5	133.7	144.2
Baltimore County	10,021	10,021	82.8	78.6	84.5
Calvert County	875	978	5.5	5.9	6.3
Carroll County	1,367	1,427	9.1	9.0	9.7
Cecil County	753	781	4.6	4.4	4.8
Charles County	1,036	970	6.6	5.9	6.3
Frederick County	2,257	2,347	15.8	15.5	16.8
Garrett County	279	283	1.5	1.5	1.6
Harford County	1,185	1,393	7.2	7.9	8.6
Howard County	3,391	3,182	25.3	22.5	24.3
Kent County	233	276	1.5	1.7	1.8
Montgomery County	16,246	17,693	123.0	127.0	136.8
Prince George's County	5,948	6,253	42.3	42.2	45.4
St. Mary's County	881	962	5.3	5.5	5.9
Talbot County	1,132	1,032	7.0	6.0	6.5
Washington County	1,852	1,860	10.3	9.8	10.6
Wicomico County	2,337	2,437	16.2	16.0	17.3
MARYLAND TOTAL	72,595	74,315	544.5	528.0	568.8

Table 17b. Utilization Forecast Methodology's Projected Discharges and Average Daily Census: Comparison of Base Year (2001) and Target Year (2007) by Region and Selected Jurisdiction

Region/ Jurisdiction	Selected	Discharges		Average Daily Census		
		Base Year (2001)	Target Year (2007)	Base Year ADC	Target Year Minimum	Target Year Maximum
Western Maryland		5,500	5,581	34.4	33.1	35.7
Montgomery County		16,246	17,693	123.0	127.0	136.8
Southern Maryland		8,740	9,163	59.8	59.4	63.9
Central Maryland Total		37,641	37,353	298.0	280.3	301.9
Eastern Shore		4,468	4,525	29.3	28.2	30.4
MARYLAND TOTAL		72,595	74,315	544.4	528.0	568.8
Baltimore City		16,851	17,096	139.5	133.7	144.2
Baltimore County		10,021	10,021	82.8	78.6	84.5
Montgomery County		16,246	17,693	123.0	127.0	136.8
Prince George's County		5,948	6,253	42.3	42.2	45.4

Note: Western Maryland includes Allegany, Garrett, Frederick and Washington counties. Southern Maryland includes Charles, Calvert, St. Mary's and Prince George's counties. Central Maryland includes Anne Arundel, Carroll, Baltimore, Harford and Howard counties and Baltimore City.

Appendix A:

Detailed Statistical Tables

Table A1. Trends in Obstetric Discharges: Maryland Hospitals, 1980 - 2002

Region/ Jurisdiction	Hospital Name	1980	1990	1995	1996	1997	1998	1999	2000	2001	2002
Allegany	Frostburg Hospital	2	-								
	Memorial of Cumberland Hospital	993	687	582	564	638	613	479	1,093	1,112	1,113
	Sacred Heart Hospital	917	736	702	710	585	585	635	51	-	6
	Total	1,912	1,423	1,284	1,274	1,223	1,198	1,114	1,144	1,112	1,119
Frederick	Frederick Memorial Hospital	1,256	2,146	2,111	2,101	2,131	2,098	1,962	2,221	2,257	2,355
Garrett	Garrett County Memorial Hospital	398	428	344	348	362	310	336	309	279	273
Washington	Washington County Hospital	1,715	1,787	1,736	1,702	1,772	1,760	1,821	1,816	1,852	1,959
WESTERN MARYLAND TOTAL		5,281	5,784	5,475	5,425	5,488	5,366	5,233	5,490	5,500	5,706
Montgomery	Holy Cross Hospital	4,119	8,281	8,019	8,153	7,410	7,169	7,301	7,850	7,954	7,847
	Montgomery General Hospital	1,219	1,228	1,085	1,049	944	945	915	830	782	913
	Shady Grove Adventist Hospital	19	4,916	4,662	4,620	4,800	5,124	5,202	5,067	4,964	4,885
	Suburban Hospital	22	19	17	16	15	16	13	18	17	33
	Washington Adventist Hospital	1,902	2,482	2,334	2,295	2,273	2,336	2,457	2,535	2,529	2,511
MONTGOMERY COUNTY TOTAL		7,281	16,926	16,117	16,133	15,442	15,590	15,888	16,300	16,246	16,189
Calvert	Calvert Memorial Hospital	506	758	831	845	843	887	819	883	875	960
Charles	Physician's Memorial Hospital*	520	515	768	535	740	939	1,027	1,107	1,036	1,102
Prince George's	Doctor's Community Hospital	29	50	41	30	28	20	17	25	31	59
	Fort Washington Medical Center*	5	-	26	22	9	13	13	17	30	27
	Laurel Regional Hospital	14	669	798	867	855	923	993	831	649	726
	Leland Memorial Hospital	14	27								
	Prince George's Hospital Center	3,232	3,798	3,979	3,889	3,389	3,268	3,137	3,318	3,297	3,318
	Southern Maryland Hospital Center	1,409	1,901	1,733	2,047	1,856	1,736	1,856	1,823	1,941	1,895
	Total	4,703	6,445	6,577	6,855	6,137	5,960	6,016	6,014	5,948	6,025
St. Mary's	St. Mary's Hospital	661	928	778	877	911	828	899	858	881	970
SOUTHERN MARYLAND TOTAL		6,390	8,646	8,954	9,112	8,631	8,614	8,761	8,862	8,740	9,057
Anne Arundel	Anne Arundel Medical Center	2,190	3,199	3,196	3,301	3,473	3,826	4,252	4,527	4,787	4,813
	North Arundel Hospital	18	37	25	23	25	17	27	37	39	32
	Total	2,208	3,236	3,221	3,324	3,498	3,843	4,279	4,564	4,826	4,845
Baltimore County	Franklin Square Hospital	2,501	4,463	3,523	3,002	2,810	2,972	3,032	3,304	3,000	2,808
	Greater Baltimore Medical Center	2,891	5,273	6,109	6,037	5,495	5,356	5,068	5,119	4,660	4,765
	Northwest Hospital Center	5	33	14	21	26	26	26	31	18	36
	St. Joseph Hospital	2,714	2,356	1,906	2,178	2,417	2,505	2,507	2,362	2,343	2,275
	Total	8,111	12,125	11,552	11,238	10,748	10,859	10,633	10,816	10,021	9,884
Baltimore City	Bon Secours Hospital	31	6	5	10	10	5	5	7	11	8
	Childrens Hospital	-	-	-	-	1	-	-	-	-	
	Church Hospital	22	13	8	7	7	8	6	-	-	
	Good Samaritan Hospital	1	4	14	14	15	21	13	23	20	21
	Harbor Hospital	1,876	2,531	1,989	1,732	1,612	1,758	1,928	2,094	2,013	1,912

Table A1. Trends in Obstetric Discharges: Maryland Hospitals, 1980 - 2002

Region/ Jurisdiction	Hospital Name	1980	1990	1995	1996	1997	1998	1999	2000	2001	2002
	Homewood North/Wyman Park	-	1								
	Homewood South/North Charles	2	27								
	Johns Hopkins Bayview Medical Ctr.	1,269	1,373	1,138	1,277	1,287	1,398	1,379	1,350	1,383	1,453
	Johns Hopkins Hospital	3,365	4,229	2,587	2,293	2,265	2,203	2,238	2,205	2,301	2,179
	Kernan Hospital	-	-	-	-	-	-	-	-	-	-
	Liberty Medical Center	15	26	33	29	21	18	21	-	-	-
	Maryland General Hospital	1,245	1,161	713	614	610	870	977	1,188	1,126	1,200
	Mercy Medical Center	1,693	3,299	2,406	2,840	3,186	3,341	3,371	3,281	3,048	2,663
	Provident Hospital	780									
	Sinai Hospital of Baltimore	3,921	4,609	3,304	3,056	2,498	2,436	2,359	2,508	2,325	2,441
	St. Agnes Hospital	2,483	3,107	2,296	2,391	2,528	2,449	2,269	2,095	2,096	2,061
	Union Memorial Hospital	1,237	1,987	1,266	1,076	910	958	906	792	869	974
	University of Maryland	2,189	2,861	2,202	1,896	1,817	1,727	1,621	1,541	1,659	1,697
	Total	20,129	25,234	17,961	17,235	16,767	17,192	17,093	17,084	16,851	16,609
Carroll	Carroll County General Hospital	767	690	883	972	1,131	1,257	1,282	1,349	1,367	1,322
Harford	Fallston General Hospital	7	11	3	6	7	9	12	172	1,181	1,353
	Harford Memorial Hospital	1,057	836	783	832	777	822	726	597	4	6
	Total	1,064	847	786	838	784	831	738	769	1,185	1,359
Howard	Howard County General Hospital	1,206	2,852	3,396	3,212	2,993	3,046	3,103	3,318	3,391	3,358
CENTRAL MARYLAND TOTAL		33,485	44,984	37,799	36,819	35,921	37,028	37,128	37,900	37,641	37,377
Cecil	Union Hospital of Cecil	493	509	751	752	730	724	798	746	753	800
Dorchester	Dorchester General Hospital	379	399	285	293	141	6	8	17	7	7
Kent	Chester River Hospital Center*	304	282	241	231	259	244	252	268	233	256
Somerset	E. W. McCready Memorial Hospital	152	2	1	-	1	1	2	1	4	-
Talbot	Memorial Hospital at Easton	959	1,208	875	800	1,010	1,064	1,097	1,148	1,132	1,085
Wicomico	Peninsula Regional Medical Center	1,936	2,444	2,150	2,271	2,225	2,158	2,290	2,345	2,337	2,241
Worcester	Atlantic General Hospital	-	-	6	10	-	5	3	2	2	1
EASTERN SHORE TOTAL		4,223	4,844	4,309	4,357	4,366	4,202	4,450	4,527	4,468	4,390
MARYLAND TOTAL		56,660	81,184	72,654	71,846	69,848	70,800	71,460	73,079	72,595	72,719

*Note: formerly Kent and Queen Anne's Hospital
Source: Maryland Hospital Discharge Abstract

Table A2. Trends in Obstetric Average Length of Stay: Maryland Hospitals, 1980 - 2002

Region/ Jurisdiction	Hospital Name	1980	1990	1995	1996	1997	1998	1999	2000	2001	2002
Allegany	Frostburg Community Hospital	1.50	-								
	Memorial of Cumberland Hospital	3.98	2.42	1.92	2.19	2.19	2.15	2.26	2.18	2.22	2.24
	Sacred Heart Hospital	3.34	2.19	1.80	1.91	2.04	2.11	2.12	2.33	-	3.17
	Total	3.67	2.30	1.86	2.03	2.12	2.14	2.18	2.19	2.22	2.24
Frederick	Frederick Memorial Hospital	3.48	2.38	1.83	2.11	2.35	2.39	2.40	2.49	2.55	2.55
Garrett	Garrett County Memorial Hospital	3.29	2.33	1.90	1.93	2.02	2.21	1.93	1.87	2.01	2.14
Washington	Washington County Hospital	3.57	2.05	1.69	1.83	1.99	1.90	1.99	2.00	2.04	2.05
WESTERN MARYLAND TOTAL		3.56	2.25	1.80	1.99	2.16	2.16	2.18	2.23	2.28	2.30
Montgomery	Holy Cross Hospital	4.08	2.71	1.99	2.20	2.69	2.68	2.72	2.70	2.79	2.88
	Montgomery General Hospital	3.44	2.63	1.92	2.17	2.47	2.51	2.59	2.52	2.45	2.55
	Shady Grove Adventist Hospital	3.89	2.60	1.82	2.21	2.59	2.66	2.71	2.82	2.83	2.87
	Suburban Hospital	6.36	2.37	2.41	2.81	3.20	1.81	2.38	2.00	2.12	2.12
	Washington Adventist Hospital	3.59	2.77	1.95	2.22	2.49	2.49	2.64	2.58	2.66	2.75
MONTGOMERY COUNTY TOTAL		3.85	2.68	1.93	2.21	2.62	2.63	2.70	2.71	2.76	2.84
Calvert Charles Prince George's	Calvert Memorial Hospital	3.87	2.45	1.84	2.00	2.19	2.13	2.16	2.21	2.31	2.36
	Civista Medical Center	3.64	2.42	2.09	2.28	2.75	2.26	2.29	2.29	2.33	2.49
	Doctor's Community Hospital	6.10	3.24	2.05	2.33	2.29	2.20	2.24	1.96	1.52	2.00
	Fort Washington Medical Center	4.20	-	2.85	2.05	1.56	1.77	2.46	2.65	2.10	2.44
	Laurel Regional Hospital	3.21	2.47	1.93	2.11	2.45	2.54	2.47	2.46	2.41	2.48
	Leland Memorial Hospital	5.43	3.15								-
	Prince George's Hospital Center	3.97	2.82	2.20	2.58	2.75	2.79	2.79	2.83	2.85	2.79
	Southern Maryland Hospital Center	4.04	2.61	2.03	2.35	2.40	2.41	2.41	2.24	2.26	2.42
	Total	4.00	2.73	2.12	2.45	2.60	2.64	2.62	2.59	2.60	2.63
St. Mary's	St. Mary's Hospital	2.95	2.28	1.72	1.89	2.08	2.13	2.08	2.11	2.18	2.17
SOUTHERN MARYLAND TOTAL		3.85	2.64	2.06	2.34	2.52	2.49	2.48	2.47	2.50	2.54
Anne Arundel	Anne Arundel Medical Center	3.60	2.72	1.66	1.88	2.34	2.39	2.41	2.51	2.59	2.50
	North Arundel Hospital	5.33	3.57	1.88	2.22	1.84	2.47	2.41	1.84	1.56	2.16
	Total	3.62	2.72	1.66	1.89	2.33	2.39	2.41	2.51	2.58	2.50
Baltimore County	Franklin Square Hospital	3.80	2.74	2.12	2.35	2.57	2.67	2.59	2.62	2.74	2.69
	Greater Baltimore Medical Center	4.44	2.63	2.09	2.51	2.79	2.89	2.91	2.95	3.25	2.86
	Northwest Hospital Center	5.00	2.82	1.71	2.00	2.08	2.12	1.81	2.00	1.72	3.05
	St. Joseph Hospital	3.89	2.66	2.30	2.38	2.80	2.64	2.76	2.85	2.90	2.95
	Total	4.06	2.68	2.13	2.44	2.74	2.77	2.78	2.82	3.02	2.97
Baltimore City	Bon Secours Hospital	5.52	3.83	2.00	2.70	2.70	1.60	1.80	2.43	3.64	1.63
	Childrens Hospital	-	-	-	-	1.00	-	-	-		-
	Church Hospital	6.59	2.38	1.75	1.57	3.14	2.50	1.17	-		-
	Good Samaritan Hospital	1.00	3.50	2.29	1.93	3.87	2.48	1.69	2.39	2.25	2.76
	Harbor Hospital	3.90	2.44	1.94	2.21	2.62	2.44	2.52	2.61	2.45	2.52

Table A2. Trends in Obstetric Average Length of Stay: Maryland Hospitals, 1980 - 2002

Region/ Jurisdiction	Hospital Name	1980	1990	1995	1996	1997	1998	1999	2000	2001	2002
Carroll Harford Howard	Homewood North/Wyman Park	-	4.00								-
	Homewood South/North Charles	3.50	3.41								-
	Johns Hopkins Bayview Medical Ctr.	4.02	3.43	2.40	2.58	2.73	2.90	3.02	3.13	3.12	2.99
	Johns Hopkins Hospital	4.77	3.28	3.03	3.19	3.55	3.43	3.29	3.27	3.66	3.62
	Kernan Hospital	-	-	-	-	-	-	-	-	-	-
	Liberty Medical Center	5.80	3.00	3.39	3.93	3.00	2.72	1.00	-	-	-
	Maryland General Hospital	4.34	2.48	1.94	2.25	2.59	2.65	2.62	2.83	2.71	2.82
	Mercy Medical Center	4.12	2.97	2.49	2.59	2.75	2.79	2.87	2.88	3.02	3.02
	Provident Hospital	4.47	-								-
	Sinai Hospital of Baltimore	3.96	2.77	2.33	2.47	2.67	2.76	2.96	2.99	2.91	3.04
	St. Agnes Hospital	3.71	2.61	2.29	2.85	2.87	2.79	2.95	2.96	3.07	3.20
	Union Memorial Hospital	4.11	2.81	2.26	2.50	2.70	2.64	2.37	2.46	2.57	2.57
	University of Maryland	3.91	3.59	3.02	2.96	2.93	3.02	3.37	3.17	3.29	3.52
	Total	4.13	2.95	2.47	2.67	2.86	2.85	2.92	2.95	3.02	3.07
	Carroll County General Hospital	3.44	2.58	1.56	1.90	2.33	2.27	2.35	2.36	2.43	2.47
	Upper Chesapeake Medical Center	4.29	3.00	1.67	2.17	2.71	1.78	1.67	2.08	2.20	2.23
	Harford Memorial Hospital	3.80	1.96	1.32	1.49	1.64	1.72	1.70	1.82	2.75	2.50
	Total	3.81	1.97	1.32	1.50	1.65	1.72	1.70	1.88	2.21	2.23
	Howard County General Hospital	3.87	2.64	1.68	2.02	2.42	2.58	2.56	2.62	2.73	2.75
	CENTRAL MARYLAND TOTAL	4.04	2.82	2.18	2.43	2.69	2.71	2.75	2.79	2.89	2.89
Cecil	Union Hospital of Cecil	3.15	2.04	1.53	1.71	1.85	1.93	1.93	1.97	2.21	2.15
Dorchester	Dorchester General Hospital	3.22	2.94	1.82	2.17	2.41	4.17	2.88	1.65	2.86	1.71
Kent	Chester River Hospital Center*	3.99	2.57	1.82	2.07	2.39	2.31	2.54	2.54	2.39	2.61
Somerset	E. W. McCready Memorial Hospital	3.96	2.50	1.00	-	3.00	3.00	1.50	4.00	2.25	-
Talbot	Memorial Hospital at Easton	2.98	2.53	1.62	1.92	2.29	2.20	2.30	2.31	2.27	2.35
Wicomico	Peninsula Regional Medical Center	3.45	2.82	1.98	2.37	2.42	2.38	2.46	2.50	2.53	2.48
Worcester	Atlantic General Hospital			2.17	2.30	-	2.20	1.00	3.00	2.50	1.00
EASTERN SHORE TOTAL		3.34	2.66	1.81	2.15	2.29	2.26	2.33	2.37	2.40	2.39
MARYLAND TOTAL		3.90	2.72	2.06	2.32	2.59	2.60	2.64	2.66	2.74	2.76

*Note: formerly Kent and Queen Anne's Hospital

Source: Maryland Hospital Discharge Abstract

Table A3. Trend in Obstetric Average Daily Census: Maryland Hospitals, 1980 - 2002

Region/ Jurisdiction	Hospital Name	1980	1990	1995	1996	1997	1998	1999	2000	2001	2002
Allegany	Frostburg Hospital	0.01	0.0								
	Memorial of Cumberland Hospital	10.8	4.6	3.1	3.4	3.8	3.6	3.0	6.5	6.8	6.8
	Sacred Heart Hospital	8.4	4.4	3.5	3.7	3.3	3.4	3.7	0.3	0.0	0.1
	Total	19.2	9.0	6.5	7.1	7.1	7.0	6.6	6.9	6.8	6.9
Frederick	Frederick Memorial Hospital	12.0	14.0	10.6	12.1	13.7	13.7	12.9	15.1	15.8	16.4
Garrett	Garrett County Memorial Hospital	3.6	2.7	1.8	1.8	2.0	1.9	1.8	1.6	1.5	1.6
Washington	Washington County Hospital	16.8	10.0	8.1	8.5	9.6	9.2	9.9	9.9	10.3	11.0
WESTERN MARYLAND TOTAL		51.6	35.7	26.9	29.6	32.5	31.8	31.2	33.5	34.4	35.8
Montgomery	Holy Cross Hospital	46.1	61.4	43.7	49.2	54.6	52.6	54.4	58.0	60.8	61.8
	Montgomery General Hospital	11.5	8.8	5.7	6.2	6.4	6.5	6.5	5.7	5.2	6.4
	Shady Grove Adventist Hospital	0.2	35.0	23.3	28.0	34.0	37.4	38.6	39.1	38.4	38.4
	Suburban Hospital	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
	Washington Adventist Hospital	18.7	18.8	12.4	13.9	15.5	15.9	17.8	17.9	18.4	18.9
MONTGOMERY COUNTY TOTAL		76.8	124.2	85.2	97.5	110.7	112.5	117.3	120.9	123.0	125.6
Calvert Charles Prince George's	Calvert Memorial Hospital	5.4	5.1	4.2	4.6	5.1	5.2	4.8	5.4	5.5	6.2
	Civista Medical Center	5.2	3.4	4.4	3.3	5.6	5.8	6.4	7.0	6.6	7.5
	Doctor's Community Hospital	0.5	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.3
	Fort Washington Medical Center	0.1	0.0	0.2	0.1	0.0	0.1	0.1	0.1	0.2	0.2
	Laurel Regional Hospital	0.1	4.5	4.2	5.0	5.7	6.4	6.7	5.6	4.3	4.9
	Leland Memorial	0.2	0.2								
	Prince George's Hospital Center	35.1	29.4	24.0	27.5	25.5	25.0	24.0	25.7	25.7	25.3
	Southern Maryland Hospital Center	15.6	13.6	9.7	13.2	12.2	11.5	12.3	11.2	12.0	12.5
	Total	51.6	48.2	38.3	46.0	43.7	43.0	43.2	42.7	42.3	43.3
St. Mary's	St. Mary's Hospital	5.3	5.8	3.7	4.5	5.2	4.8	5.1	5.0	5.3	5.8
SOUTHERN MARYLAND TOTAL		67.5	62.5	50.5	58.5	59.5	58.8	59.6	60.0	59.8	62.7
Anne Arundel	Anne Arundel Medical Center	21.6	23.8	14.6	17.0	22.2	25.0	28.1	31.2	34.0	32.9
	North Arundel Hospital	0.3	0.4	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
	Total	21.9	24.2	14.7	17.2	22.3	25.2	28.3	31.4	34.2	33.1
Baltimore County	Franklin Square Hospital	26.1	33.5	20.4	19.3	19.8	21.7	21.5	23.7	22.5	0.3
	Greater Baltimore Medical Center	35.1	38.0	35.0	41.5	42.1	42.5	40.4	41.3	41.5	22.0
	Northwest Hospital Center	0.1	0.3	0.1	0.1	0.1	0.2	0.1	0.2	0.1	39.8
	St. Joseph Hospital	29.0	17.1	12.0	14.2	18.5	18.1	18.9	18.5	18.6	18.3
	Total	90.2	88.9	67.5	75.1	80.6	82.5	81.0	83.7	82.8	80.3
Baltimore City	Bon Secours Hospital	0.5	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0
	Childrens Hospital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Church Hospital	0.4	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
	Good Samaritan Hospital	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.2
	Harbor Hospital	20.0	16.9	10.6	10.5	11.6	11.8	13.3	15.0	13.5	13.2

Table A3. Trend in Obstetric Average Daily Census: Maryland Hospitals, 1980 - 2002

Region/ Jurisdiction	Hospital Name	1980	1990	1995	1996	1997	1998	1999	2000	2001	2002
Carroll Harford Howard	Homewood North/Wyman Park	0.0	0.0								
	Homewood South/North Charles	0.0	0.3								
	Johns Hopkins Bayview Medical Ctr.	14.0	12.9	7.5	9.0	9.6	11.1	11.4	11.6	11.8	11.9
	Johns Hopkins Hospital	44.0	38.0	21.5	20.1	22.0	20.7	20.2	19.8	23.1	21.6
	Kernan Hospital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Liberty Medical Center	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0
	Maryland General Hospital	14.8	7.9	3.8	3.8	4.3	6.3	7.0	9.2	8.4	9.2
	Mercy Medical Center	19.1	26.9	16.4	20.2	24.0	25.5	26.5	25.9	25.2	22.0
	Provident Hospital	9.5	0.0								
	Sinai Hospital of Baltimore	42.5	34.9	21.1	20.7	18.3	18.4	19.1	20.5	18.5	20.3
	St. Agnes Hospital	25.2	22.2	14.4	18.7	19.9	18.7	18.3	17.0	17.7	18.0
	Union Memorial Hospital	13.9	15.3	7.8	7.4	6.7	6.9	5.9	5.3	6.1	6.8
	University of Maryland	23.5	28.2	18.2	15.4	14.6	14.3	14.9	13.4	14.9	16.3
	Total	227.7	203.9	121.8	126.1	131.5	134.1	136.9	137.9	139.5	139.5
	Carroll County General Hospital	7.2	4.9	3.8	5.1	7.2	7.8	8.3	8.7	9.1	8.9
	Upper Chesapeake Medical Center	0.1	0.1	0.0	0.0	0.1	0.0	0.1	1.0	7.1	8.3
	Harford Memorial Hospital	11.0	4.5	2.8	3.4	3.5	3.9	3.4	3.0	0.0	0.0
	Total	11.1	4.6	2.8	3.4	3.6	3.9	3.4	4.0	7.2	8.3
	Howard County General Hospital	12.8	20.6	15.6	17.7	19.8	21.5	21.7	23.8	25.3	25.2
CENTRAL MARYLAND TOTAL		370.9	347.0	226.2	244.7	265.0	275.0	279.6	289.5	298.0	295.3
Cecil Dorchester Kent Somerset Talbot Wicomico Worcester	Union Hospital of Cecil	4.3	2.8	3.1	3.5	3.7	3.8	4.2	4.0	4.6	4.7
	Dorchester General Hospital	3.3	3.2	1.4	1.7	0.9	0.1	0.1	0.1	0.1	0.0
	Chester River Hospital Center*	3.3	2.0	1.2	1.3	1.7	1.5	1.8	1.9	1.5	1.8
	E. W. McCready Memorial Hospital	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Memorial Hospital at Easton	7.8	8.4	3.9	4.2	6.3	6.4	6.9	7.3	7.0	7.0
	Peninsula Regional Medical Center	18.3	18.9	11.7	14.8	14.7	14.1	15.5	16.1	16.2	15.2
Worcester	Atlantic General Hospital	-	-	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
EASTERN SHORE TOTAL		38.7	35.3	21.3	25.6	27.4	26.0	28.4	29.4	29.4	28.7
MARYLAND TOTAL		605.5	604.6	410.2	455.9	495.1	504.1	516.1	533.2	544.5	548.2

*Note: formerly Kent and Queen Anne's Hospital

Source: Maryland Hospital Discharge Abstract

Table A4. Trend in Obstetric Services Average Charge Per Case: Maryland Hospitals, 1990 - 2002

Region/ Jurisdiction	Hospital	1990	1995	1996	1997	1998	1999	2000	2001	2002
Allegany	Frostburg Hospital, Inc.	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Memorial of Cumberland Hospital	\$2,106	\$3,447	\$3,728	\$3,650	\$3,598	\$3,870	\$3,867	\$4,075	\$3,923
	Sacred Heart Hospital	\$2,059	\$2,444	\$2,636	\$2,803	\$3,029	\$2,825	\$2,507	\$0	\$1,852
	Total	\$2,082	\$2,898	\$3,119	\$3,245	\$3,320	\$3,274	\$3,806	\$4,075	\$3,912
Frederick	Frederick Memorial Hospital	\$1,751	\$2,397	\$2,557	\$2,666	\$2,622	\$2,661	\$2,568	\$2,959	\$2,977
Garrett	Garrett Co. Memorial Hospital	\$2,087	\$2,216	\$2,586	\$2,430	\$2,692	\$3,077	\$2,976	\$3,228	\$3,947
Washington	Washington County Hospital	\$1,964	\$2,338	\$2,583	\$2,814	\$2,512	\$2,510	\$2,552	\$2,757	\$2,901
WESTERN MARYLAND AVERAGE		\$1,923	\$2,485	\$2,699	\$2,827	\$2,746	\$2,766	\$2,843	\$3,130	\$3,180
Montgomery	Holy Cross Hospital	\$1,957	\$2,811	\$3,080	\$3,502	\$3,297	\$3,245	\$3,404	\$3,572	\$3,838
	Montgomery General Hospital	\$2,752	\$2,504	\$2,940	\$3,283	\$3,599	\$3,611	\$3,584	\$3,774	\$3,949
	Shady Grove Adventist Hospital	\$1,849	\$2,905	\$3,197	\$3,579	\$3,330	\$3,340	\$3,288	\$3,318	\$3,714
	Suburban Hospital	\$2,596	\$3,463	\$4,978	\$5,504	\$5,111	\$4,636	\$3,658	\$3,947	\$4,430
	Washington Adventist Hospital	\$1,942	\$2,654	\$3,090	\$3,919	\$3,693	\$3,954	\$3,837	\$3,725	\$4,528
MONTGOMERY COUNTY TOTAL		\$1,982	\$2,796	\$3,107	\$3,576	\$3,387	\$3,408	\$3,445	\$3,528	\$3,915
Calvert Charles Prince George's	Calvert Memorial Hospital	\$2,001	\$2,591	\$2,659	\$2,899	\$2,981	\$3,041	\$3,110	\$3,162	\$3,451
	Civista Medical Center	\$1,614	\$2,278	\$2,781	\$3,289	\$3,582	\$3,100	\$2,837	\$3,113	\$3,114
	Doctor's Community Hospital	\$2,141	\$2,977	\$4,362	\$4,198	\$3,905	\$4,376	\$4,003	\$4,018	\$3,941
	Fort Washington Medical Center	\$0	\$3,484	\$3,096	\$3,144	\$4,095	\$4,464	\$3,533	\$4,248	\$4,165
	Laurel Regional Medical Center	\$1,877	\$3,760	\$3,106	\$3,229	\$3,723	\$4,324	\$4,216	\$4,124	\$5,156
	Leland Memorial Hospital	\$1,824	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Prince George's Hospital Center	\$2,841	\$3,266	\$3,566	\$3,388	\$3,488	\$3,517	\$3,607	\$3,667	\$3,548
	Southern Maryland Hosp. Ctr.	\$2,382	\$3,293	\$4,111	\$4,533	\$3,811	\$4,165	\$4,279	\$4,533	\$4,509
St. Mary's	Total	\$2,596	\$3,332	\$3,672	\$3,716	\$3,621	\$3,855	\$3,896	\$4,004	\$4,051
	St. Mary's Hospital	\$1,862	\$2,498	\$2,853	\$3,106	\$3,263	\$3,369	\$3,347	\$3,689	\$3,758
SOUTHERN MARYLAND TOTAL		\$2,407	\$3,101	\$3,447	\$3,535	\$3,517	\$3,640	\$3,633	\$3,782	\$3,842
Anne Arundel	Anne Arundel Medical Center	\$2,011	\$2,644	\$3,022	\$3,650	\$3,772	\$3,647	\$3,547	\$3,706	\$3,977
	North Arundel Hospital	\$2,634	\$3,776	\$4,154	\$3,956	\$4,422	\$4,500	\$4,296	\$4,215	\$4,519
	Total	\$2,018	\$2,653	\$3,030	\$3,652	\$3,774	\$3,652	\$3,553	\$3,710	\$3,980
Baltimore County	Northwest Hospital Center	\$2,302	\$3,550	\$3,409	\$3,645	\$4,434	\$3,961	\$4,323	\$4,203	\$5,048
	Franklin Square Hospital	\$2,436	\$3,476	\$3,142	\$3,202	\$3,570	\$3,981	\$4,254	\$4,403	\$4,569
	Greater Baltimore Medical Center	\$1,831	\$2,667	\$2,968	\$3,323	\$3,767	\$3,725	\$3,749	\$3,747	\$3,820
	St. Joseph Hospital	\$2,544	\$2,803	\$3,220	\$3,225	\$3,108	\$3,166	\$3,274	\$3,316	\$3,549
	Total	\$2,194	\$2,937	\$3,064	\$3,270	\$3,563	\$3,667	\$3,801	\$3,843	\$3,975
Baltimore City	Bon Secours Hospital	\$3,366	\$4,250	\$5,081	\$5,751	\$6,135	\$4,327	\$3,974	\$7,858	\$3,432
	Childrens Hospital	\$0	\$0	\$0	\$1,315	\$0	\$0	\$0	\$0	\$0
	Church Hospital	\$2,299	\$3,661	\$4,113	\$5,493	\$4,230	\$4,495	\$0	\$0	\$0
	Good Samaritan Hospital	\$2,895	\$4,087	\$3,263	\$5,154	\$3,515	\$3,182	\$4,526	\$3,741	\$4,443
	Harbor Hospital	\$2,560	\$3,377	\$3,722	\$4,154	\$3,698	\$3,778	\$3,994	\$3,714	\$4,018

Table A4. Trend in Obstetric Services Average Charge Per Case: Maryland Hospitals, 1990 - 2002

Region/ Jurisdiction	Hospital	1990	1995	1996	1997	1998	1999	2000	2001	2002
Carroll Harford Howard	Homewood/North Wyman Park	\$1,778	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Homewood/South Charles	\$2,818	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Johns Hopkins Bayview Medical Ctr.	\$3,553	\$4,345	\$4,273	\$4,334	\$4,590	\$4,776	\$5,053	\$5,003	\$5,574
	Johns Hopkins Hospital	\$2,961	\$4,697	\$5,344	\$5,259	\$4,987	\$4,572	\$4,861	\$5,464	\$6,887
	Kernan Hospital	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Liberty Medical Center	\$3,506	\$4,983	\$4,583	\$4,036	\$4,836	\$3,611	\$0	\$0	\$0
	Maryland General Hospital	\$2,643	\$3,055	\$3,135	\$4,779	\$5,593	\$5,889	\$6,152	\$6,238	\$6,912
	Mercy Medical Center	\$2,421	\$3,361	\$3,620	\$3,406	\$3,507	\$4,144	\$4,422	\$4,536	\$4,793
	Provident Hospital	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Sinai Hospital of Baltimore	\$2,317	\$3,131	\$3,346	\$3,646	\$4,189	\$4,542	\$4,712	\$4,559	\$5,125
	St. Agnes Hospital	\$2,677	\$3,306	\$3,219	\$3,432	\$3,476	\$4,661	\$4,427	\$4,848	\$4,410
	Union Memorial Hospital	\$2,407	\$3,782	\$3,883	\$4,026	\$4,447	\$4,144	\$5,151	\$5,313	\$5,577
	University of Maryland Hospital	\$3,104	\$4,431	\$4,202	\$3,924	\$4,222	\$5,349	\$5,485	\$6,246	\$7,162
	Total	\$2,688	\$3,720	\$3,870	\$3,983	\$4,129	\$4,547	\$4,769	\$4,968	\$5,488
	Carroll County General Hospital	\$2,284	\$2,279	\$2,526	\$2,920	\$3,034	\$3,391	\$3,745	\$3,912	\$3,967
	Upper Chesapeake Medical Center	\$2,283	\$2,401	\$3,141	\$4,443	\$2,636	\$2,932	\$2,850	\$3,403	\$4,571
	Harford Memorial Hospital	\$1,629	\$2,560	\$2,978	\$2,921	\$2,830	\$2,762	\$3,482	\$4,997	\$3,538
	Total	\$1,638	\$2,559	\$2,980	\$2,935	\$2,828	\$2,765	\$3,341	\$3,409	\$4,566
	Howard Co. General Hospital	\$2,210	\$2,601	\$3,152	\$3,492	\$3,293	\$3,252	\$3,341	\$3,443	\$3,524
	CENTRAL MARYLAND TOTAL	\$2,450	\$3,232	\$3,430	\$3,640	\$3,791	\$4,007	\$4,156	\$4,282	\$4,629
Cecil	Union Hospital of Cecil	\$2,288	\$2,588	\$2,816	\$3,035	\$3,544	\$3,310	\$3,235	\$3,723	\$4,735
Dorchester	Dorchester General Hospital	\$2,240	\$2,179	\$2,744	\$3,205	\$3,127	\$3,038	\$2,361	\$2,659	\$2,150
Kent	Chester River Hospital Center*	\$2,649	\$3,074	\$3,538	\$3,823	\$3,601	\$3,149	\$4,101	\$5,277	\$2,720
Somerset	E.W. McCready Memorial Hospital	\$2,333	\$2,181	\$0	\$5,331	\$5,252	\$12,297	\$9,626	\$5,615	\$0
Talbot	Memorial Hospital at Easton	\$1,658	\$2,329	\$2,693	\$3,207	\$3,338	\$3,543	\$3,551	\$3,518	\$4,074
Wicomico	Peninsula Regional Medical Center	\$1,745	\$2,308	\$2,584	\$3,070	\$3,159	\$3,225	\$3,203	\$3,164	\$3,447
Worcester	Atlantic General Hospital	\$0	\$1,927	\$3,130	\$0	\$2,898	\$4,881	\$4,271	\$1,797	\$2,783
EASTERN SHORE TOTAL		\$1,874	\$2,395	\$2,706	\$3,145	\$3,296	\$3,319	\$3,348	\$3,459	\$3,792
MARYLAND TOTAL		\$2,276	\$3,013	\$3,260	\$3,518	\$3,560	\$3,696	\$3,785	\$3,916	\$4,208

*Note: formerly Kent and Queen Anne's Hospital
Source: Maryland Hospital Discharge Abstract

Table A5. Acute Care Obstetric Service Payer Mix, Percent of Cases by Payer: Maryland Hospitals, 2002

Region/ Jurisdiction	Hospital Name	SOURCE OF PAYMENT								
		Medicare	Medicaid	Medicaid HMC	HMO	Blue Cross	Commercial	Self Pay	No Charge	Other
Allegany	Memorial of Cumberland Hospital	0.1%	10.9%	32.5%	16.6%	25.9%	13.0%	1.0%	0.0%	0.0%
	Sacred Heart	0.0%	33.3%	16.7%	33.3%	0.0%	0.0%	16.7%	0.0%	0.0%
	Total	0.1%	11.0%	32.4%	16.7%	25.7%	13.0%	1.1%	0.0%	0.0%
Frederick	Frederick Memorial Hospital	0.3%	3.4%	22.2%	45.1%	17.8%	6.9%	1.1%	0.0%	3.1%
Garrett	Garrett County Memorial Hospital	1.1%	12.8%	46.9%	18.3%	11.7%	5.1%	2.9%	0.0%	1.1%
Washington	Washington County Hospital	0.4%	2.4%	32.0%	24.6%	22.3%	16.0%	2.1%	0.0%	0.3%
WESTERN MARYLAND TOTAL		0.3%	5.0%	28.7%	31.2%	20.6%	11.1%	1.6%	0.0%	1.4%
Montgomery	Holy Cross Hospital	0.1%	19.4%	8.5%	47.2%	12.7%	11.7%	0.9%	0.1%	0.1%
	Montgomery General Hospital	0.1%	2.3%	21.8%	35.8%	14.6%	24.0%	1.3%	0.0%	0.1%
	Shady Grove Adventist Hospital	0.1%	2.8%	9.9%	42.0%	26.8%	12.9%	1.7%	0.0%	3.6%
	Suburban Hospital	0.0%	12.1%	6.1%	33.3%	15.2%	21.2%	9.1%	0.0%	3.0%
	Washington Adventist Hospital	0.0%	9.6%	31.1%	36.5%	9.0%	9.3%	3.2%	0.0%	1.3%
MONTGOMERY COUNTY TOTAL		0.1%	11.9%	13.0%	43.3%	16.5%	12.2%	1.6%	0.0%	1.3%
Calvert	Calvert Memorial Hospital	0.1%	2.6%	29.0%	31.7%	24.9%	5.6%	0.5%	0.1%	5.5%
Charles	Civista Medical Center	0.3%	5.2%	27.3%	27.0%	25.4%	14.2%	0.6%	0.0%	0.0%
Prince George's	Doctor's Community Hospital	1.7%	30.5%	6.8%	27.1%	16.9%	10.2%	6.8%	0.0%	0.0%
	Fort Washington Medical Center	0.0%	25.9%	14.8%	18.5%	11.1%	11.1%	7.4%	0.0%	11.1%
	Laurel Regional Hospital	0.0%	19.0%	27.8%	28.4%	9.1%	11.2%	2.3%	0.0%	2.2%
	Prince George's Hospital Center	0.1%	35.7%	41.1%	14.9%	3.1%	4.3%	0.7%	0.0%	0.1%
	Southern Maryland Hospital Center	0.2%	2.9%	33.9%	24.4%	20.5%	16.7%	1.3%	0.0%	0.0%
	Total	0.1%	23.3%	36.8%	19.7%	9.5%	9.1%	1.2%	0.0%	0.4%
St. Mary's	St. Mary's Hospital	0.1%	1.4%	30.2%	11.1%	16.0%	11.3%	2.0%	0.0%	27.8%
SOUTHERN MARYLAND TOTAL		0.2%	16.5%	34.1%	20.9%	13.7%	9.6%	1.1%	0.0%	3.8%
Anne Arundel	Anne Arundel Medical Center	0.1%	4.4%	14.0%	32.0%	24.5%	24.1%	0.2%	0.0%	0.7%
	North Arundel Hospital	0.0%	21.9%	21.9%	21.9%	9.4%	21.9%	0.0%	0.0%	3.1%
	Total	0.1%	4.5%	14.1%	31.9%	24.4%	24.1%	0.2%	0.0%	0.7%
Baltimore County	Franklin Square Hospital	0.1%	5.6%	39.2%	17.1%	20.3%	16.3%	0.4%	0.0%	0.9%
	Greater Baltimore Medical Center	0.0%	0.5%	4.6%	42.1%	35.0%	16.9%	0.7%	0.0%	0.1%
	Northwest Hospital Center	5.6%	11.1%	25.0%	13.9%	11.1%	11.1%	5.6%	0.0%	16.7%
	St. Joseph Hospital	0.0%	4.0%	12.9%	23.3%	22.9%	35.6%	0.4%	0.0%	0.9%
	Total	0.1%	2.8%	16.4%	30.6%	28.0%	21.0%	0.5%	0.0%	0.6%

Table A5. Acute Care Obstetric Service Payer Mix, Percent of Cases by Payer: Maryland Hospitals, 2002

Region/ Jurisdiction	Hospital Name	SOURCE OF PAYMENT								
		Medicare	Medicaid	Medicaid HMC	HMO	Blue Cross	Commercial	Self Pay	No Charge	Other
Baltimore City	Bon Secours Hospital	0.0%	0.0%	25.0%	0.0%	0.0%	12.5%	62.5%	0.0%	0.0%
	Good Samaritan Hospital	0.0%	19.0%	19.0%	14.3%	33.3%	4.8%	9.5%	0.0%	0.0%
	Harbor Hospital	0.2%	6.2%	43.2%	18.5%	15.6%	14.2%	1.6%	0.0%	0.5%
	Johns Hopkins Bayview Medical Ctr.	0.7%	17.5%	51.8%	12.6%	6.6%	3.9%	1.2%	0.0%	5.6%
	Johns Hopkins Hospital	0.7%	8.3%	51.6%	15.9%	14.1%	8.5%	0.2%	0.0%	0.7%
	Maryland General Hospital	0.3%	8.7%	81.1%	3.0%	5.9%	0.8%	0.3%	0.0%	0.1%
	Mercy Medical Center	0.3%	6.5%	56.5%	12.8%	14.6%	8.4%	0.8%	0.0%	0.1%
	Sinai Hospital of Baltimore	0.1%	7.2%	33.8%	17.0%	27.4%	14.4%	0.1%	0.0%	0.0%
	St. Agnes Hospital	0.1%	7.6%	28.1%	15.4%	21.0%	23.0%	4.6%	0.0%	0.2%
	Union Memorial Hospital	0.1%	15.0%	54.1%	8.5%	13.3%	7.6%	1.0%	0.0%	0.3%
	University of Maryland	0.4%	6.0%	58.8%	10.2%	16.0%	6.2%	1.8%	0.0%	0.6%
	Total	0.3%	8.5%	48.9%	13.5%	16.1%	10.6%	1.3%	0.0%	0.8%
Carroll	Carroll County General Hospital	0.0%	1.4%	22.8%	20.0%	28.7%	26.6%	0.4%	0.0%	0.0%
Harford	Harford Memorial Hospital	0.0%	33.3%	16.7%	0.0%	16.7%	16.7%	0.0%	0.0%	16.7%
	Upper Chesapeake Medical Center	0.2%	3.4%	34.2%	15.4%	20.7%	18.3%	0.3%	0.0%	7.4%
	Total	0.2%	3.5%	34.1%	15.4%	20.7%	18.3%	0.3%	0.0%	7.4%
Howard	Howard County General Hospital	0.0%	5.0%	10.2%	28.0%	31.8%	23.9%	0.7%	0.0%	0.3%
CENTRAL MARYLAND TOTAL		0.2%	5.7%	30.8%	22.0%	22.3%	17.1%	0.8%	0.0%	0.9%
Cecil	Union Hospital of Cecil	0.4%	3.8%	41.6%	15.8%	20.4%	15.1%	2.3%	0.0%	0.8%
Dorchester	Dorchester General Hospital	0.0%	42.9%	28.6%	14.3%	14.3%	0.0%	0.0%	0.0%	0.0%
Kent	Chester River Hospital Center*	0.0%	7.4%	35.9%	19.5%	20.7%	8.2%	1.2%	0.4%	6.6%
Talbot	Memorial Hospital at Easton	0.1%	8.5%	40.2%	30.0%	13.0%	7.7%	0.5%	0.0%	0.0%
Wicomico	Peninsula Regional Medical Center	0.0%	5.5%	44.0%	14.9%	17.1%	17.7%	0.8%	0.0%	0.0%
Worcester	Atlantic General Hospital	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
EASTERN SHORE TOTAL		0.1%	6.1%	42.1%	19.0%	16.9%	14.2%	1.0%	0.0%	0.5%
MARYLAND TOTAL		0.2%	8.4%	27.8%	27.2%	19.5%	14.5%	1.1%	0.0%	1.4%

*Note: formerly Kent and Queen Anne's Hospital
Source: Maryland Hospital Discharge Abstract

APPENDIX B:

Description of Forecast Methodology

Methodology for Forecasting Future Average Daily Census for Hospital Inpatient Obstetric Services.

The Commission uses the methodology described in this section to forecast future utilization of hospital inpatient obstetric services. The primary objective of this methodology is to provide a framework for rational decisions about future hospital inpatient obstetric services utilization.

Period of Time Covered. The base year from which the forecast is calculated is the most recent calendar year for which birth data from the Vital Statistics Administration are available. The target year to which the forecast is calculated is five years after the base year.

Service Definition. Forecasts are made for obstetric services based on patient records with principal diagnoses in DRGs 370-379 and 382-384. No forecasts are made for newborn services, and records with principal diagnoses in DRGs 385-391 are excluded from the calculations.

Assumptions. Future acute inpatient obstetric services average daily census is forecast by jurisdiction of utilization. The Commission bases utilization forecasts on projected trends in births, current patterns of migration, and expectations about average lengths of stay. Jurisdictional forecasts reflect changes in jurisdictional variations in average lengths of stay. Inter-jurisdictional and interstate patterns of migration from area of residence to jurisdiction of utilization remain constant from the base year to the target year.

Table B1 shows our projection of trends in average length of stay, which are adjusted on a county-specific basis and applied to forecasted discharges to yield the average daily census by jurisdiction. Target year statewide expected average lengths of stay are as follows:

Table B1. Projected Average Length of Stay

DRG Category	Target Year Expected Length of Stay	
	Minimum	Maximum
Cesarean Section Deliveries	3.95	4.15
All Other Obstetric Discharges	2.20	2.40

Data Sources. Base year estimates of births, by area of residence and jurisdiction of care, are obtained from the latest available complete year of resident and recorded births by area of residence and jurisdiction of care from the most recent Department of Health and Mental Hygiene tabulations of birth certificates. The latest available complete year of births to Maryland residents, by area of residence, in federal and military hospitals in Maryland are obtained from the most recent Department of Health and Mental Hygiene tabulations of birth certificates. Forecasts of future resident births to Maryland residents, by area of mother's residence, are obtained from the most recent Maryland Department of Planning projections.

Base year utilization of Maryland hospital inpatient obstetric services, including age, principal diagnosis on admission and area of residence of each patient, are obtained from the Commission's hospital discharge abstract data.

Method of Calculation to Forecast Future Acute Inpatient Obstetric Services Utilization.

(1) When area of Maryland residence is equal to jurisdiction of care, calculate the target year number of births, by jurisdiction of care, by subtracting from the target year number of births, by area of residence, the product of the base year percent of births to residents of the area in all other jurisdictions of care, by area of residence, and the target year number of births, by area of residence, and subtracting from the result the product of the base year percent of births in federal hospitals, by area of residence, and the target year number of births, by area of residence.

(2) When area of Maryland residence is not equal to jurisdiction of care, calculate the target year number of births, by jurisdiction of care, by the following steps:

- Determine the percent of births by residents of other areas of Maryland in the jurisdiction of care (steps a and b):

- (a) Determine the base year percent of in-migration for deliveries to residents of other areas of Maryland.

- (b) Determine the base year percent of births in the jurisdiction of care that is not due to in-migration. Divide (a) by this percent. This calculation yields an adjustment of the base year percent of in-migration.

- Determine the number of births by residents of the jurisdiction of care (steps c and d):

- (c) Determine the base year percent births in jurisdiction of care to residents of the jurisdiction of care.

- (d) Multiply the percent obtained in (c) by the target year number of births in the jurisdiction of residence to obtain the number of births by the residents of the jurisdiction of care.

- Determine the number of births by residents of other areas of Maryland in the jurisdiction of care (step e).

- (e) Multiply the percent obtained in (d) by the number obtained in (b).

(3) Calculate the target year number of births in Maryland, by jurisdiction of care, by summing, over all Maryland areas of residence, the target year number of births, by area of residence and jurisdiction of care (Tables A5 and A6).

(4) Calculate the percent of obstetrical discharges not resulting in births, by jurisdiction of care, by dividing the base year number of obstetrical discharges in non-birth related DRGs (376-379 and 382-384) by the total base year number of obstetrical discharges in all DRGs, by jurisdiction of care.

(5) Calculate the target year number of discharges, by jurisdiction of care, by multiplying the target year number of births, by jurisdiction of care, by the sum of one and the proportion of obstetrical discharges not resulting in births, by jurisdiction of care, and adding the result to the base year number of out-of-state discharges, by jurisdiction of care (from Table A1).

(6) Using the values found in Table B1 above, calculate the proportional statewide change in average length of stay, by DRG category, by subtracting the target year expected average length of stay, by DRG category, from the base year average length of stay, by DRG category, and dividing the result by the base year average length of stay, by DRG category.

(7) Calculate the minimum and maximum adjusted target year average length of stay, by jurisdiction of care, by summing over both DRG categories, multiplying the product of one minus the proportional statewide change in average length of stay, by DRG category, the base year average length of stay, by DRG category, and the number of discharges in the base year by DRG category, and dividing the result by the sum of the number of discharges in the base year, by DRG category.

(8) Calculate the number of patient days projected in the target year, by jurisdiction of care, by multiplying the number of discharges projected in the target year, by jurisdiction of care, by the adjusted target year length of stay, by jurisdiction of care.

(9) Calculate the average daily census, by jurisdiction of care, by dividing the target year number of patient days, by jurisdiction of care, by 365.

Mathematical Formulas. The utilization forecast methodologies described above are shown in this section in mathematical form. Terms are defined in alphabetical order in the following table:

<u>Term</u>	<u>Definition</u>
d	discharge type, where 1 = Cesarean Section deliveries (DRGs 370-371), 2 = vaginal deliveries (DRGs 372-375) and 3 = post partum and ante partum diagnoses (DRGs 376-379, 382-384)
i	area of residence, where 1 ... 24 = Maryland jurisdictions and 25, ..., 48 = out-of-state areas
j	jurisdiction of care, where 1, ..., 24 = Maryland jurisdictions
m	minimum and maximum, where 1 = minimum and 2 = maximum
ADC	average daily census
ATLOS	adjusted target year average length of stay
BBIR	base year number of births
BDIS	base year number of discharges
BLOS	base year average length of stay
BODIS	base year number of out-of-state discharges
BPBIRFH	base year percent of births in federal hospitals
BPROIM	base year percent of in-migration for discharges resulting in deliveries to residents of other areas in Maryland
BPROOM	base year percent births to residents of an area in all other jurisdictions of utilization
CHLOS	statewide proportional change in average length of stay
NBDIS	non-birth discharges
PRNONBIR	percent of obstetrical discharges not resulting in births
TBIR	target year number of births in Maryland
TDIS	target year number of discharges
TELOS	target year expected average length of stay
TLOS	target year average length of stay
TPD	target year patient days

Formulas. Forecasted obstetric services average daily census is calculated as shown in the following formulas:

$$(1) \text{ When } i = j, \text{ TBIR}_{ij} = \text{TBIR}_i - [(\text{BPROOM})(\text{TBIR})_i] - [(\text{BPROFH}_i)(\text{TBIR}_i)]$$

$$(2) \text{ When } i \leq 24 \text{ and } \neq j, \text{ TBIR}_{ij} = \frac{\{[(\text{TBIR}_i)([\text{BPROIM}_{ij}])]\}}{\{[\text{BPROIM}_{ij}/(1 - \text{BPROIM}_{ij})] * (1 - \text{BPROOM}_j)(\text{TBIR}_i)\}}$$

$$(3) \text{ TBIR}_j = \sum_{i=1}^{24} \text{TBIR}_{ij}$$

$$(4) \text{ PRNONBIR}_j = \frac{\text{NBDIS}_{d3j}}{\text{BDIS}_j}$$

$$(5) \text{ TDIS}_j = [(1 + \text{PRNONBIR}_j)(\text{TBIR}_j)] + \text{BODIS}_j$$

$$(6) \text{ CHLOS}_{d1, 2+3m} = [(\text{BLOS}_d - \text{TELOS}_{dm})]/\text{BLOS}_d$$

$$(7) \text{ ATLOS}_{jm} = \sum_d [(1 - \text{CHLOS}_{dm})(\text{BLOS}_{jd})[(\text{BDIS}_{jd})/(\text{BDIS}_{jd})]$$

$$(8) \text{ TPD}_j = (\text{TDIS}_j)(\text{ATLOS}_j)$$

$$(9) \text{ ADC}_j = \text{TPD}_j/365$$



4160 Patterson Avenue
Baltimore, MD 21215
Telephone: (410) 764-3460
FAX: (410) 358-1236
Toll Free: 1 (877) 3245-1762
TDD: 1 (800) 735-2258
www.mhcc.state.md.us